

No. 3

MINISTRY OF IRRIGATION, POWER AND ENERGY
THE GOVERNMENT OF THE DEMOCRATIC
SOCIALIST REPUBLIC OF SRI LANKA

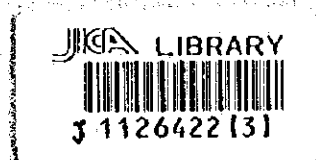
JAPAN INTERNATIONAL
COOPERATION AGENCY

**THE FEASIBILITY STUDY ON
THE REHABILITATION OF
IRRIGATION AND DRAINAGE SYSTEMS IN
THE RIVER BASINS OF SOUTHERN SRI LANKA**

VOLUME III

**APPENDIXES-2
(FEASIBILITY STUDY)**

SEPTEMBER 1996



CHUO KAIHATSU CORPORATION
AERO ASAHI CORPORATION

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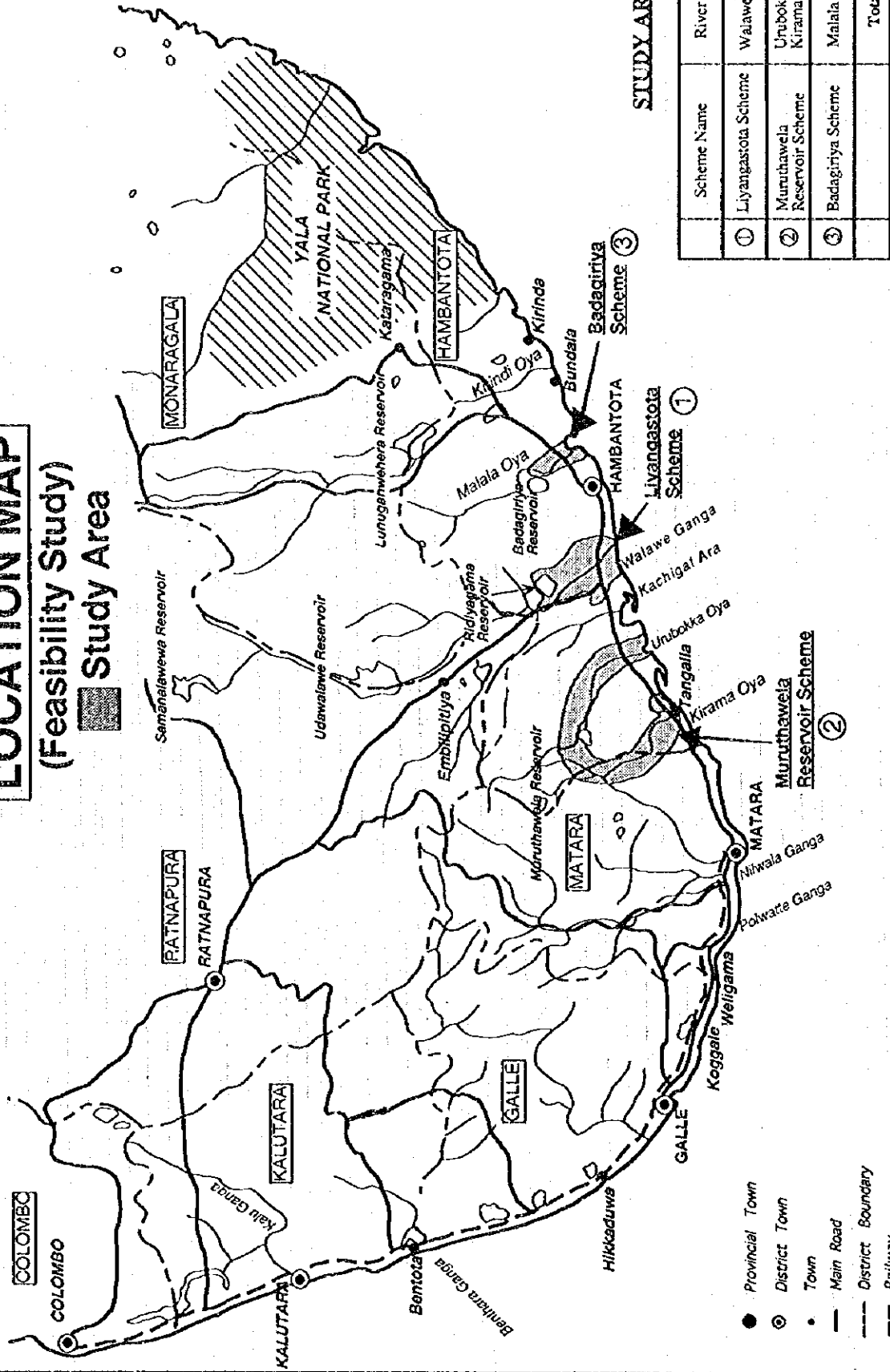
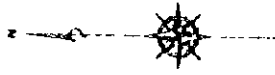
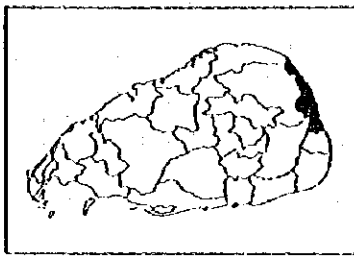
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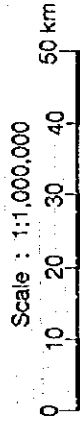
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LOCATION MAP (Feasibility Study) Study Area



Scheme Name	River Basin	Command Area (ha)
① Liyangastota Scheme	Walawe Ganga	5,007.4
② Muruthawela Reservoir Scheme	Unbokka Oya Kirama Oya	5,472.5
③ Badagiriya Scheme	Malala Oya	680.0
	Total	11,165.9

STUDY AREA



INDIAN OCEAN

- Provincial Town
- ⊙ District Town
- Town
- Main Road
- - - District Boundary
- Railway
- Lagoon or Reservoir
- Y River

APPENDIXES-1 (FEASIBILITY STUDY)

TABLE OF CONTENTS

Location Map

Table of Contents

Abbreviations

Conversion Table

	Page
Appendix-2.1	Socio-Economy A2.1-1
Appendix-2.2	Agro-Economy A2.2-1
Appendix-2.3	Irrigation and Drainage A2.3-1
Appendix-2.4	Agriculture A2.4-1
Appendix-2.5	Cost Estimation A2.5-1
Appendix-2.6	Project Evaluation A2.6-1
Appendix-2.7	Record of Meetings A2.7-1

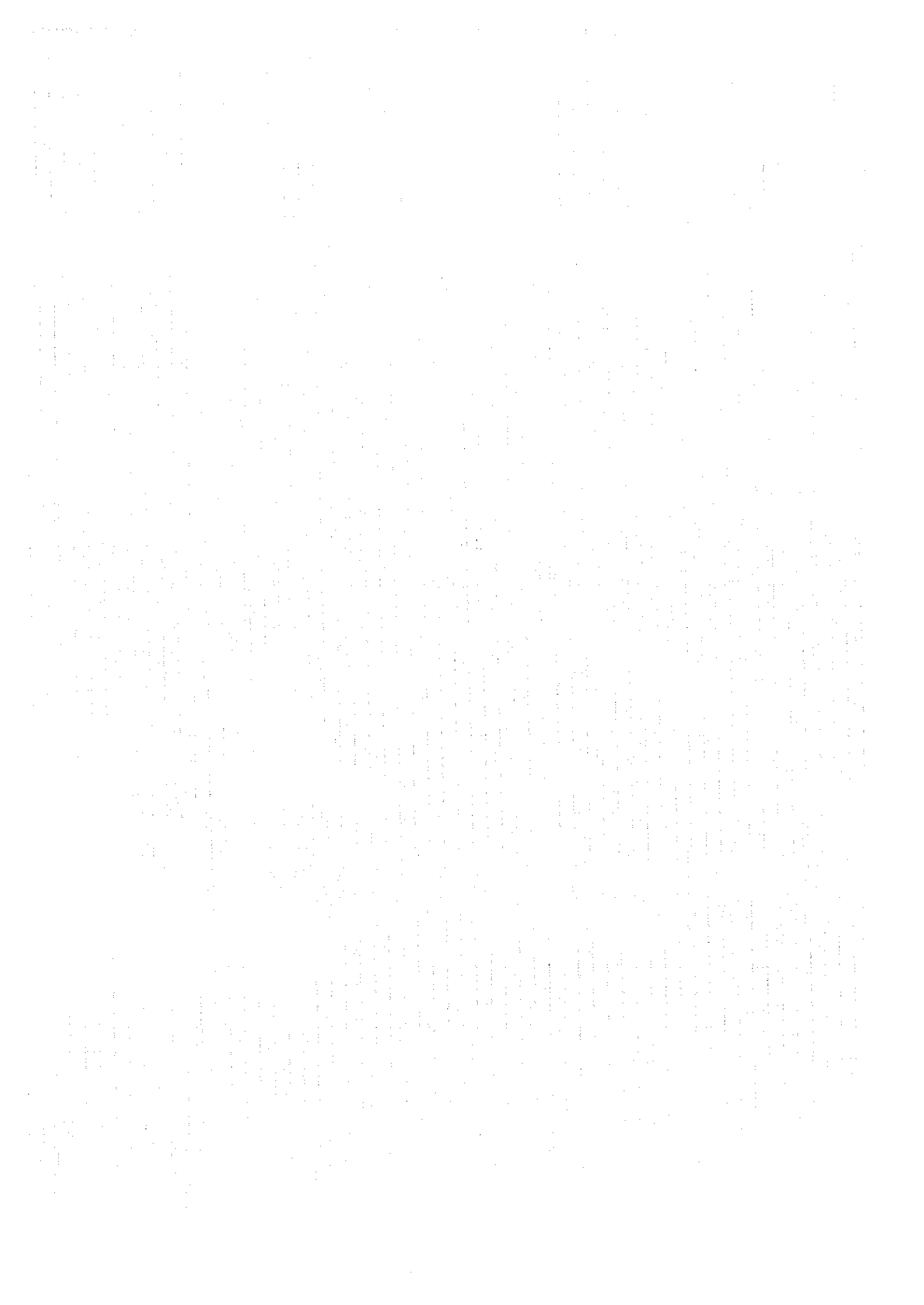
ABBREVIATIONS

AGA	Assistant Government Agents
ASC	Agrarian Service Center
CEA	Central Environmental Authority
DAS	Department of Agrarian Service
DCO	Distributory Canal Organization
DFAR	Department of Fisheries and Aquatic Resources
DFEO	Divisional Fisheries Extension Office
DIE	Department of Immigration and Emigration
DM	Department of Meteorology
DOA	Department of Agriculture
FO	Farmers' Organization
FOO	Farmers' Organizations (<i>pl.</i>)
HIRDEP	Hambantota Integrated Rural Development Project
ID	Department of Irrigation
IIMI	International Irrigation Management Institute
IMD	Irrigation Management Division
IMF	International Monetary Fund
IMPSA	Irrigation Management Policy Support Activity
INMAS	Integrated Management of Major Irrigation System
IRDP	Integrated Rural Development Project
KOISP	Kirindi Oya Irrigation and Settlement Project
LCD	Land Commissionere Department
MANIS	Management of Irrigation Systems
MASL	Mahaweli Authority of Sri Lanka
MEA	Mahaweli Economic Agency
MIPE	Ministry of Irrigation, Power and Energy
MLLD	Ministry of Lands and Land Development
MOA	Ministry of Agriculture
MPCS	Multi-purpose Co-operative Society
NARA	National Aquatic Resources Agency
NAREPP	Natural Resources and Environmental Policy Project
NIRP	National Irrigation Rehabilitation Project
NORAD	Norwegian Agency for Development Cooperation
PMC	Project Management Committee
SAG	Study Advisory Group
SAM	Special Area Management
SD	Survey Department
SIDA	Swedish International Development Agency
SLFO	System Level Farmer Organization
SLPA	Sri Lanka Ports Authority
WLAC	Working Level Advisory Committee
WUG	Water Users' Group
AI	Agricultural Instructor (DOA)
AO	Agricultural Officer (DOA)
CRE	Chief Resident Engineer
DA	Divisional Assistant (ID)
DDI	Deputy Director of ID
DI	Director of ID
DO	Divisional Officer (DAS)
FI	Fisheries Inspector
IE	Irrigation Engineer

IO	Institutional Organizer
PE	Project Engineer (IRDP)
PM	Project Manager (IMD)
RE	Resident Engineer
RPM	Resident Project Manager (IMD)
RO	Research Officer
TA	Technical Assistant
EIA	Environmental Impact Assessments
EIRR	Economic Internal Rate of Return
IEE	Initial Environmental Examination
SWE	Salt-water Exclusion
WID	Women-in-Development

Conversion Factor

	<u>Form Metric System</u>		<u>To Metric System</u>			
Length	1cm	=	0.394 inch	1inch	=	2.54 cm
	1m	=	3.28 ft	1 ft	=	30.48 cm
	1km	=	0.621 mile	1 mile	=	1.609 km
	1chaine	=	30.48 m	1 m	=	0.033 chaine
Area	1 cm ²	=	0.155 sq.in	1 sq.ft	=	0.0929 m ²
	1 m ²	=	10.76 sq.ft	1 sq.yd	=	0.835 m ²
	1 ha	=	2.471 acres	1 acre	=	0.4047 ha
	1 km ²	=	0.386 sq.mile	1 sq.mile	=	2.59 km ²
Volume	1 m ³	=	35.3 cu.ft	1 cu.ft	=	0.0283 m ³
	10 ⁶ m ³	=	810.7 acre.ft	1 acre.ft	=	1,233.5 m ³
Velocity	1 m ³ /s	=	35.3 cusec	1 cusec	=	0.0283 m ³ /s
	1 ton/ha	=	891 lb/acre	1 lb/acre	=	1.12 kg/ha
Paddy/Rice	1 kg	=	0.048 bushels	1 bushel	=	20.87 kg
	1 kg/ha	=	0.019 bushel/acre	1 bushel/acre	=	51.55 kg/ha
	1 ton paddy	=	0.7 ton rice	1 ton rice	=	1.43 ton paddy



APPENDIX-2.1 SOCIO-ECONOMY

TABLE OF CONTENTS

	Page
2.1.1 Introduction	A2.1-1
2.1.2 A Brief History of Three Irrigation Schemes	A2.1-3
2.1.3 Demographic Features in the Study Area	A2.1-5
2.1.4 Socio-economic Characteristics of Sample Population	A2.1-6
2.1.5 Social, Economic and Health Conditions of Sample Population	A2.1-7
2.1.6 Land Ownership and Tenure	A2.1-7
2.1.7 Women's Participation in Irrigation and Cultivation Activities	A2.1-8
2.1.8 Legal Systems	A2.1-9
2.1.9 Local Organizations	A2.1-10
2.1.10 Cultural Practices in Agriculture	A2.1-11

LIST OF TABLES

App.2.1.1-1	Selected Sample Farmer Organization Areas for Baseline Socio-economic Survey	A2.1-12
App.2.1.1-2	Command Area and Sample Farm Families by Irrigation Scheme .	A2.1-13
App.2.1.4-1	Age Composition of Sample Farmers by Type of Irrigation Scheme	A2.1-14
App.2.1.4-2	Level of Education of Sample Farm Families by Type of Irrigation Scheme	A2.1-14
App.2.1.5-1	Ownership of Assets of Sample Families by Type of Irrigation Scheme	A2.1-15
App.2.1.5-2	Ownership of Animals by Type of Irrigation Scheme	A2.1-15
App.2.1.5-3	Housing Conditions by Type of Irrigation Scheme	A2.1-16
App.2.1.5-4	Availability of Basic Facilities of Water, Toilets and Electricity by Type of Irrigation Scheme	A2.1-17
App.2.1.5-5	Type of Illnesses Suffered by Members in Sample Farm Families During Last Year by Type of Irrigation Scheme	A2.1-18
App.2.1.5-6	Source of Treatment by Type of Irrigation Scheme	A2.1-18
App.2.1.6-1	Cultivated Area of Paddy and Tenure by Type of Irrigation Scheme	A2.1-19
App.2.1.6-2	Ownership Status of Paddy Land Housing by Type of Irrigation Scheme	A2.1-19
App.2.1.6-3	Average Land Holding Size of Paddy and Tenure by Irrigation Scheme	A2.1-20
App.2.1.6-4	Average Size (Acres) of Paddy and Tenure by Type of Sub-units .	A2.1-20
App.2.1.6-5	Average Land Holding Size of Irrigated Highland and Tenure by Type of Irrigation Scheme	A2.1-21
App.2.1.6-6	Average Land Holding Size of Non-Irrigated Highland and Tenure by Type of Irrigation Scheme	A2.1-21
App.2.1.7-1	Assistance to Women in Household Activities by Type of Irrigation Scheme	A2.1-22
App.2.1.7-2	Membership in Women Organizations by Type of Irrigation Scheme	A2.1-23
App.2.1.7-3	Income Generating Activities for Women by Type of Irrigation Scheme	A2.1-23

APPENDIX 2.1 SOCIO-ECONOMY

2.1.1 Introduction

(1) Baseline Socio-economic Survey

Location of the project sites are shown below.

- 1) Liyangastota Scheme (2 DSDs of Ambalantota and Hambantota)
- 2) Muruthawela Reservoir Scheme (5 DSDs of Beliatta, Okewela, Tangalle, Weeraketiya, and Angunakolapelessa)
- 3) Badagiriya Scheme (Hambantota DSD)

The selected farmer organization areas are shown in App.2.1.1-1.

(2) Sample Selection

A stratified sampling method was used to select a representative sample of farmer organization areas from each scheme. Selection of sample farmer organizations was done on the basic criteria of physical location of farmer organization areas indicating possible areas of water shortage and abundance, the command area and number of farmers.

Questionnaires were administered to randomly selected farmers in 25 sample farmer organization areas. The identification of strata or groups was done on the basis of location of farms, land ownership status, land holding size and membership of farmer organization.

Farmer organization leaders were requested to prepare a list of farmers and then group them (only cultivators, whether they are owners or others in a sample farmer organization area) into mainly four groups on the basis of location of their paddy fields, land ownership status, FO membership status and the extent of land cultivated. After this stratification was done a random sample of farmers from each group was selected by the study team with the advice of FO leaders. Those who were living outside the sample areas were excluded.

(3) Sample Size

Out of about 19,000 farm families only 307 farm families were selected. Therefore, at least 10-20 percent of farm families or a minimum of 10 farm families from each sample farmer organization area were selected for the survey. The selection of sample farmer organization areas was done to represent variations of irrigation schemes in terms of significant socio-economic conditions. The total number of 307 sample farm families averaged about 12 households from each farmer organization area (see App.2.1.1-2 for the number of sample farm families and size of sample in each sample area).

(4) Collection of Data

The questionnaire was then designed, developed and pre-tested. The field survey was carried out from 17th February to 22nd February and from 3rd March to 7th March, 1996.

Field supervisors visited the FO leaders first and asked them to inform sample farmers regarding the field survey. The next day, FO leaders and field supervisors introduced the field investigators to the sample farmers with an explanation of the study objectives before filling in the questionnaire. These attempts were made with a view to establish rapport with farmers before collection of data.

The study team neither visited sample farmers with government officials nor interviewed the farmers in the presence of government officials because farmers are reluctant to discuss their cultivation and irrigation problems in front of such officials. If FO leaders were there, they were requested not to be privy to the interview with the farmers. Except in a few cases because of sickness or other urgency only the selected sample farmers were interviewed to ensure representativeness of the sample population.

The structured questionnaire consisted of two parts. Social aspects comprised the first part of the questionnaire and contained mainly closed end questions designed to obtain the following information.

1) Demographic information

- a) Total population in each irrigation scheme area
- b) Socio-economic characteristics of beneficiaries
 - Age groups
 - Level of education
 - Employment status
- c) Social, economic and health conditions of the target population
 - Ownership of assets
 - Conditions of houses and access to basic facilities
 - Health care facilities

2) Land tenure system

Land ownership status of farmers

3) Status of women

- a) Involvement in the production process
- b) Participation in women and other organizations
- c) Assistance from family members and community
- d) Income generating activities

The second part of the questionnaire was designed to collect information on crop production, farm income, sources of non-farm incomes, land preparation methods, labour utilization, application of fertilizer, weedicides, pesticides and availability of seed paddy, utilization of institutional and non-institutional credit facilities, crop insurance, difficulties in marketing produce, existence and effectiveness of farmer organizations, farmer satisfaction of water distribution and attitudes toward contribution of rehabilitation costs. Information collected on the above items have been analyzed separately, and are discussed in other sections of the study.

2.1.2 A Brief History of Three Irrigation Schemes

(1) Liyangastota Scheme

Liyangastota anicut was constructed in the late 19th century to divert water from the Walawe river for cultivation of land on the right and left banks of the lower river basin. Ridiyagama reservoir was constructed in 1927. A feeder canal brings water from the anicut to the reservoir. This irrigation scheme was designed to provide irrigation water to a command area of about 15,000 acres (6,000ha) on the left bank area of the lower Walawe basin. As of the present the majority of large land owners have leased their paddy lands to tenant cultivators and about 50% of the total number of cultivators are tenant or Ande cultivators.

The area irrigated by direct diversion from the anicut through the main canal is the Walawe right bank area. The RB main canal provides irrigation water to an area from Mamadala to Nonagama. There are a large number of traditional villages, and land tenure is similar to the left bank area.

These two areas, the left and right bank, were in operation prior to the major irrigation scheme in the Walawe basin, namely, Uda Walawe irrigation scheme which was completed in 1968. At present the main reservoirs of Uda Walawe and Chandrika Wewa provide irrigation water to about 30,000 acres. About 10,000 people have been settled in this area.

The upper Walawe river basin extends from Tract 2 to Angunakolapelessa on the right bank and from Kiriibban Wewa to Ridiyagama on the left bank. From below the Ridiyagama reservoir up to Ambalantota and from Mamadala to Nonagama comprise the lower basin. The basic difference between the upper river basin and lower river basin is the type of social organization. The lower river basin has a long history of irrigation management and practices of cultivation.

The Uda Walawe irrigation scheme is managed by the Mahaweli Economic Agency as a special area from 1982. In the Liyangastota scheme area the IMD has established farmer organizations and the Project Management Committee is mainly responsible for water allocation and irrigation management. The Irrigation Department is the government agency responsible for operation and maintenance activities.

(2) Muruthawela Reservoir Scheme

Farming has been practiced for centuries in two tributary (oya) basins of Urubokka and Kirama. The Muruthawela reservoir was constructed in 1968. These three systems, Urubokka oya, Kirama oya and Muruthawela LB comprise the Muruthawela Reservoir scheme.

The Urubokka oya is a tributary of the Nilwala river and small diversions (anicut) along the tributary from the Raluwe Navarathna anicut to Ranna anicut provide irrigation water to about 5,000 acres (2,000 ha). The Udukiriwila tank is the medium size tank located in this area.

The Kirama tank was constructed at the beginning of the 19th century and land on the left and right banks of the Kirama oya have been cultivated by diverting water from 18 small river diversions or anicuts in addition to the Kirama tank. It is estimated that about 5,000 acres (2,000 ha) are cultivated with paddy. Under the Hambantota Integrated Rural Development Project (financed by NORAD) some anicuts, access roads and channels were rehabilitated during the period 1980 to 1992.

The Muruthawela LB scheme is a settlement scheme and it was intended to provide irrigation water to Tract 1 and Tract 2. The unit of land alienation under this scheme was 2 acres of paddy land and 0.5 acre of upland. Nearly 60% of settlers were from the surrounding areas and others were land owners selected from the Urubokka oya area. The upper area of the Muruthawela Reservoir scheme area referred to as Tract 1 constitutes purana (traditional) villages and about 1,000 acres are now cultivated by taking water directly from the main canal.

Small scale irrigation schemes comprising small tanks, settlement area and river diversions (anicuts) are a distinct feature in this area. Small and medium tanks collect run-off water during the monsoon for irrigation and domestic water. The irrigation capacity of each anicut and small tank varies considerably and their spatial distribution indicates head and tail distinctions and different social conditions.

Many of the anicuts and small tanks have deteriorated and as a result some have been rehabilitated under the Village Irrigation Rehabilitation Programme (VIRP) and Integrated Rural Development Programme (IRDP). The World Bank gave financial support for the VIRP which was a 5 year project implemented from 1981 to 1985. 40 schemes in the Hambantota district were selected for rehabilitation. Under the MANIS programme commenced in 1987 the Irrigation Department has selected 7 medium schemes in the district for development of farmer organizations. Recently the National Irrigation Rehabilitation Project also selected some small and medium schemes for both physical rehabilitation and institutional development.

Irrigation management of these anicuts and tanks has changed hands among different government agencies during the last three decades. The Government Agent managed them until 1958. Since then management has been performed by the Agrarian Services Department (1958-70), Territorial Civil Engineering Organization (1970-77), Department of Irrigation (1977-79) and again the Agrarian Services Department and

Irrigation Department and Irrigation Management Division from 1979. The Muruthawela LB scheme is now under the INMAS programme. Anicuts and small tanks under the Urubokka oya and Kirama oya schemes are managed by the FOs under direction of the Irrigation Department and the Agrarian Services Department.

(3) Badagiriya

This scheme is located in the lower basin of the Malala Ara. Badagiriya tank was constructed in 1957. Since there are a large number of small tanks existing in the upper area of the river basin water shortage has been experienced from the early stages of population settlement. Irrigation discharge is now supplemented by water diverted from the Lunugamwehera reservoir through a feeder canal constructed in 1986. Farmers have reported that about 150 acres in the tail area of the scheme does not get water for cultivation even after releasing supplementary water from the Lunugamwehera reservoir.

Each settler was given 1 ha of paddy land and 0.2 ha for homestead. Farmer organizations were formed under the INMAS programme and the Sub-project Management Committee (SPC) of Badagiriya is part of the Project Management Committee of Kirindi oya.

2.1.3 Demographic Features in the Study Area

(1) Population in the District

According to demographic survey conducted by the Department of Census and Statistics in 1994, the total population in the district of Hambantota was 518,336 living in 109,806 households.

During the time period after independence in 1948 the total population in the district increased from 149,600 in 1949 to 518,366 in 1994. As a result of rapid population increase the density of population also increased from 150 per square mile in 1949 to 519 in 1994. The population in the district had therefore grown at a rate of more than 3% during this period which was above the national average.

The distribution of urban population and percentage of urban population are indicators of urban growth. The existing urban centres such as Hambantota, Ambalantota and Weeraketiya have expanded slowly in response to the increase of population and agricultural development. Census reports also indicate that the total area under agricultural activities was 156,843 ha in the 1960s and that after the 1960s the cultivated area largely increased due to completion of major settlement schemes including Uda Walawe irrigation project and Muruthawela Reservoir scheme.

(2) Population in the Study Area

In order to estimate the total population in the three target irrigation scheme areas, their boundaries need to be demarcated. This is difficult due to the fact that some Divisional Secretariate areas or even Grama Niladari divisions may constitute the

Study area as well as urban centres and other areas cultivated under rainfed cultivation.

Population estimates are based on the number of farm families as given in the Feasibility Study Report and the average family size obtained from the baseline socio-economic survey conducted in 1996. The total number of farm families in the Study area is estimated to be about 19,200. The average family size is 5.48. The total farm population in the Study area is approximately 105,200.

Out of 11 Divisional Secretariate areas, 6 areas namely, Tangalle, Angunakolapelessa, Weeraketiya, Okewela (Muruthawela Reservoir), Ambalantota and Hambantota (Liyangastota and Badagiriya) fall within the total Study area. The total population in these 6 areas was estimated to be 282,794 in 1994 according to the demographic survey conducted by the Census and Statistics Department.

2.1.4 Socio-economic Characteristics of Sample Population

(1) Average Family Size

The average family size in the district was 4.7 according to 1994 data, and it was indicated at 5.5 in the Study area according to the field survey. Variations across three irrigation systems are small ranging from 5.34 in Liyangastota to 5.60 in Muruthawela Reservoir. Family size is somewhat higher when compared to the district average of 4.7. Males slightly outnumber females, 51.9% to 48.1%, respectively.

(2) Age Groups

The age distribution of the total sample population is given in App.2.1.4-1. Children under 15 years of age and adults over 55 years constitute about 34% of the total sample population. This is the dependent population. Those between 15 to 55 years are the potential labour force and more than 2/3 of the sample population constitutes the workforce. This information can be used to estimate the total number of man days available in the Study area.

(3) Level of Education

Educational level of the sample population is shown in App.2.1.4-2. The proportion of the sample population reporting no schooling is 10.6%, ranging from 8.5% in Liyangastota to 12.5% in Badagiriya. Nearly one-third of the sample population had studied above grade 10. This means the percentage of population reporting secondary education beyond grade 10 is relatively very high in the Study area as compared with the district figure of 14% in 1994.

(4) Employment Status

The employed sample population as a percentage of the total population is about 33% while the district figure is 27%. Estimated unemployment rates (unemployed among the labour population between 15 and 54 years of age) are 31.4% for Liyangastota,

26.7% for Muruthawela Reservoir, and 33.9% for Badagiriya while the district rate was 16% in 1994.

2.1.5 Social, Economic and Health Conditions of Sample Population

(1) Assets Ownership of Sample Farm Families

The survey questionnaire was designed to get information on ownership of valuable assets of farm families including mainly that of television sets, motor bicycles, tractors, sprayers and livestock. According to App.2.1.5-1, nearly 45% of sample farmers own television sets and also about one third of sample farmers in Liyangastota own a two-wheel tractor whereas in Muruthawela Reservoir only 18% of farmers reported owning a two wheel tractor. Also 45% of sample farmers own spray machines ranging from 53% for Liyangastota to 38% for Badagiriya.

Only a very few farmers reported owning cattle according to App.2.1.5-2 although the Hambantota district is one of the areas having a large number of cattle population. Raising of goats, pigs and poultry is not an important activity among sample farmers.

(2) Housing Conditions

Over 66% of all households sampled had permanent houses, and while only 14% reported to own temporary houses according to App.2.1.5-3. However, 73% of the total number of houses had cement flooring and 83% have tile or asbestos roofing. 76% of the total houses are constructed with brick/cabook or cement blocks.

Sample farmers were also asked to indicate whether they had access to basic facilities such as toilets and potable water supply. As shown in App.2.1.5-4, about 60% of sample households had either protected or unprotected wells. Nearly 97% had water seal or pit toilets. Only 31% overall have reported that electricity is available for lighting, ranging area-wise from 44% for Liyangastota to 24% for Muruthawela Reservoir.

(3) Health Status

App.2.1.5-5 provides information on the health status of sample farm families and only about 25% of farm family members had suffered some illness in 1995. The nature of diseases suffered during the last year, 1995 is given in App.2.1.5-5. Malaria, fever and gastric enteric diseases were the major illnesses reported. Nearly 93% sought western medical treatment and only about 7% took ayurvedic treatment as shown in App.2.1.5-6.

2.1.6 Land Ownership and Tenure

According to App.2.1.6-1 the total extent of paddy cultivated by sample farmers is about 968 acres and the average land holding size is 3.1 acres. Nearly 50% of the total area comes under Ande (tenant) cultivation.

The existence of a number of conflicting systems of land tenure and ownership rights over lands cultivated with paddy are reported under both private ownership and state lands alienated to settlers.

Traditionally, areas cultivated under small and medium tanks and river diversion systems (anicuts) were owned by a group of families, known as Gambarayas and their descendants have now inherited such lands. These large land owners have leased most of their lands to tenants for cultivation with arrangements for sharing crop production. This traditional system of land owner-tenant relationship has not changed very much except the change of owner and tenant according to recognized rules of land inheritance and tenancy.

App.2.1.6-2 gives the status of cultivators, and about one third of farmers fall into the category of Aude cultivators. This group has security of tenancy but a number of cases regarding problems of sharing crop production were reported to the Agrarian Services Department.

In the two settlement areas of the Muruthawela Reservoir and Badagiriya schemes, each settler was given almost equal amount of land and such land cannot be sold to others. However, the original allottee and their descendants have in some cases leased out or mortgaged their lands. But information on such hidden tenancy and informal practices of cultivation is difficult to be obtained in a survey.

App.2.1.6-3 through App.2.1.6-6 provide some details on average land holding size of paddy, irrigated upland and rainfed upland in the three irrigation scheme areas in terms of land tenure.

Under traditional village tanks and small river diversion schemes in the Study area there are purana (traditional) villages and ownership of this land has passed from generation to generation. With the population increase a complex system of land tenure has emerged. Some lands have now been leased out, mortgaged or sold to others and some land owners have migrated to other areas. There is a group of absentee land owners. In addition, the pangu system existing under the village tanks indicates the rights for water and obligations for maintenance activities.

Land was sub-divided with the principle of exchange of land or user rights known as Thattumaru and Kattimaru. The bethma principle of the cultivation of the land utilizing the available water during water shortages is rarely practiced.

Many sample farmers have a homestead of half an acre to one acre (App.2.1.6-6) which is a descent homestead. It has a compound and some trees including jak, coconut, banana and a vegetable growing plot. However, the population growth has created demand for new homesteads and upland is now a scarce resource in the area.

2.1.7 Women's Participation in Irrigation and Cultivation Activities

Only about 23% of housewives reported as shown in App.2.1.7-1 that they had received no assistance from other family members in cooking, drawing water and collecting firewood. This indicates that some women spend most of their time and

energy for only household activities including child care, cooking, washing clothes, etc. It can be argued that they have very little time to get involved in agricultural activities and local organizations. Such women do not have time to undertake any other activities outside their homes such as training, etc.. Collecting firewood or fetching water from distant places are difficult tasks in some areas. Wells or streams are the only sources of domestic water for some families. Nearly one third of sample respondents obtain water from common wells and streams (App.2.1.5-4).

Only 25% of women were members in women's organizations according to App.2.1.7-2. Only a few women are either members or office holders of farmer organizations. It has been observed that two or three women members interviewed in the survey are very active members in farmer organizations. The majority of women therefore do not have the opportunity to raise their voice about their problems and needs and also to participate in decision making activities in collective organizations such as farmer organizations and Rural Development Societies. However, other female members of sample farm families, including daughters or close relatives may have obtained membership in other local level organizations. The baseline socio-economic survey was not designed to collect information on their involvement in women's organizations.

Some NGOs like the Janashakthi bank (Women's Development Society) provides some support services to women. The majority of women interviewed in the survey said that they were members of 5 member teams formed under the Janashakthi Bank system, and had obtained credits amounting to Rs.5,000 to Rs.10,000 at very low interest. Such credit facilities have been useful for them for various purposes including cultivation and urgent financial needs. The Janashakthi Bank system also assists in the creation of additional income sources through self-employment. However, participation of women who are wives of sample farmers in such income generating activities is low.

In addition to household activities and agricultural activities some women were engaged in self-employment such as mat weaving, cadjan weaving and dress making. They have also expressed their willingness to start new income generating activities with outside financial support (App.2.1.7-3).

2.1.8 Legal Systems

The Irrigation Department was set up in 1900 and the Irrigation Ordinance of 1946 provided certain provisions to obtain farmer participation through Kanna (cultivation) meetings.

There are four major irrigation and agrarian ordinances which were enacted after independence in 1948. With the Paddy Lands Act, No.1 of 1958, District Agricultural Committees under Government Agents of respective districts and Cultivation Committees were established at the village level replacing the traditional Vel Vidane system.

The Irrigation ordinance of 1946 was amended in 1968 making provisions for the Irrigation Department to be in charge of construction and maintenance of irrigation systems. The Agricultural Productivity Act of 1972 abolished Cultivation Committees and established Agricultural Productivity Committees. The Agrarian Services Act of 1979 established Agrarian Services Committees with the cultivation officer to be responsible in cultivation and irrigation matters.

In 1984 the Ministry of Lands and Land Development established the Irrigation Management Division for implementation of Integrated Management of Major Irrigation Settlement Schemes (INMAS) which was to establish farmer organizations and joint management committees under major irrigation schemes. In 1988 the government of Sri Lanka formally approved by cabinet paper a policy for participatory irrigation management.

The existing laws relating to irrigation management, i.e. operation and maintenance do not provide legal support for implementation of participatory management. Recently two legislative steps were taken to meet the needs of participatory management. They are amendments to the Irrigation Ordinance and the Agrarian Services Act. These legal changes were for the legal recognition of farmer organizations and Project Management Committees. These changes were made to delegate more authority to them for recovery of O&M charges from farmers and to change the procedures of holding Kanna meetings. However, the need for a complete revision of legislative provisions as well as establishment of mechanisms for proper implementation of such laws is yet to be considered.

2.1.9 Local Organizations

Sample farmers were asked to name community level organizations in which the sample farmers or their family members are members or office holders. They mentioned 10 major institutions in addition to farmer organizations which are of significance for their agricultural, religious and other social activities. They are the Rural Development Society, Co-operative Thrift and Credit Society (Sanasa), Youth Society, Sports Society, Death Donation Society, Gramodaya Mandalaya, Samurdi Society, Janasakthi Bank Society and societies associated with a number of Non-government Organizations (NGOs) such as Sarvodaya, Plan International, Agro Mart, etc.

In addition to the above there are other government sponsored village level bodies such as the parent-teacher associations, Mediation Boards set up by the Ministry of Justice, etc. There are several NGOs with different programmes at the village level. Of these, the Sarvodaya Societies and Janashakthi Bank Society are better known and have higher participation rates. However, there is no information collected from the survey as a basis to discuss the functioning of each organization and their contribution to irrigation and agricultural matters. Nevertheless, they are important local institutions which can be used for training of local people and mobilization of local resources. Some development activities related to employment generation, welfare activities, disputes resolution, etc. can be implemented through such organizations.

Over the years the government has provided a number of government officials to various development programmes and other administrative functions at the village level. Some of the government officers work closely with the above-mentioned local institutions. Other local institutions operate outside the formal government machinery and perform an independent supportive role. These rural institutions form the link between the rural communities and the government institutions. For example, Sanasa, Co-operative Society and Janasakthi Bank in the Study area provide the agricultural input of credit. They also have the potential to undertake a wide range of activities related to agriculture, irrigation and welfare of farm families which would include improvement of access farm roads and organization of Shramadanas (self-help). Therefore, it would be seen that the network of rural institutions which had already been developed in the three irrigation scheme areas can provide the basis for effective participation by the rural communities in the main areas of agricultural, irrigation, social and economic development activities. Employment generating activities and skills development fall into this category.

2.1.10 Cultural Practices in Agriculture

The rural credit system and methods of labour exchanges in cultivation and maintenance activities are two main areas of economic cooperation among rural people. The informal transactions with friends, relatives, money lenders, large land owners, boutique owners and buyers of produce are common in any rural community. About 40% of sample farmers depend on their community members for various services including obtaining cultivation loans and labour exchanges (Attham). The Cheetu system which is a local savings and credit scheme is also commonly practiced in the Study area. This system contributes to social cohesion among members of the rural community also. In the recent past the attention of NGOs like Janasakthi Bank was to institutionalize such schemes for the benefit of community members. It has been mentioned that some services rendered by community members are paid in kind.

App. 2.1.1-1

**Selected Sample Farmer Organization Areas for
Baseline Socio-economic Survey**

Scheme/ Sub-scheme	Unit	Tank/ Anicut	Sample FO Name	Location on System	
Liyangastota	LB	Ridiyag.	tank	Neela	head
		Ridiyag.	tank	Parakum	head
		Bolana	tank	Senanayake	middle
		Bolana	tank	Theraputta	tail
	RB	Mamadala	tank	Hungan. East	head
		Oluwila	tank	Rotawela	middle
		Oluwila	tank	Tennakoongama	tail
	Lunama	tank	Pingama	tail	
Muruthawela	LB	Tract 1	tank	Eksath	head
		Tract 2	tank	Thisara	head
		Tract 2	tank	D9	tail
		Tract 3	tank	D1 DOC	head
		Tract 3	tank	D9 DOC	tail
Urubokka	Raluwe N.	anicut	Pubudu	head	
	Udukiriw.	tank	Agrahera	head	
	Hunnaku.	anicut	Hunnakumbura	middle	
	Udukiriw.	tank	Roteyaya Ran.	tail	
	Ranna	anicut	Ranna	tail	
Kirama	Hambum.	anicut	Hambumandiya	head	
	Arachchi	anicut	Arachchi	head	
	Okewela	anicut	Okewela	middle	
	Pattiyaw.	anicut	Pattiyawela	middle	
	Daranda	anicut	Daranda	tail	
Badagiriya	D1 canal	tank	D1	head	
	D3 canal	tank	D3	tail	

App. 2.1.1-2 Command Area and Sample Farm Families by Irrigation Scheme

	Muruthawela Reservoir		Liyangastota						Badagiriya	Total
	LB main	Urubokka	Walawe LB			Walawe RB				
			Rigiyagama	Bolana	Mamadala	Lunama	Oluwila			
1. Command area	4,305	4,425	4,841	2,371	4,819	2,139	1,308	161	1,516	25,885
2. No. of FOs	27	26	22	8	16	12	8	11	4	134
3. Sample FOs	5	5	5	2	2	2	1	1	2	25
4. No. of farmers in sample FOs	682	630	762	225	106	125	95	100	318	3,043
5. No. of sample farmers	64	81	55	20	23	22	10	11	21	307
6. Sample size as % of farmers in sample FO areas	9	13	7	9	22	18	11	11	7	10

App. 2.1.4-1 Age Composition of Sample Farmers by Type of Irrigation Scheme

Age group	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Less than 1 Yr.	13	1.2	4	0.9	1	0.9	18	1.1
1 - < 5 Yrs.	52	4.6	13	2.8	4	3.4	69	4.1
5 - < 15 Yrs.	133	11.9	68	14.8	16	13.7	217	12.8
15 - < 25 Yrs.	262	23.3	95	20.7	26	22.2	383	22.5
25 - < 45 Yrs.	381	34.0	154	33.5	44	37.6	579	34.1
45 - < 55 Yrs.	117	10.4	43	9.4	7	6.0	167	9.8
55 Yrs. & over	164	14.6	82	17.9	19	16.2	265	15.6
Total	1,122	100.0	459	100.0	117	100.0	1,698	100.0

App. 2.1.4-2 Level of Education of Sample Farm Families by Type of Irrigation Scheme

Level of Education	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
No schooling	115	10.7	39	8.7	15	12.5	169	10.3
Grade 1 - 5	258	24.0	98	21.8	24	20.0	380	23.1
6 - 10	292	27.1	106	23.5	46	38.3	444	26.9
11 - 12	350	32.5	167	37.1	35	29.2	552	33.5
Graduates or equivalent	62	5.7	40	8.9	-	-	102	6.2
Total	1,077	100.0	450	100.0	120	100.0	1,647	100.0

App. 2.1.5-1 Ownership of Assets of Sample Families by Type of Irrigation Scheme

Assets	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Television	71	39.2	47	58.0	9	42.9	127	44.9
Radio / Cassette	134	74.0	66	81.5	18	85.7	218	77.0
Sewing Machine	104	57.5	48	59.3	11	52.4	163	57.6
Motor Bicycle	32	17.7	15	18.5	2	9.5	49	17.3
Bicycle	133	73.5	73	90.1	17	81.0	223	78.8
Furniture Set	90	49.7	39	48.1	10	47.6	139	49.1
Other Valuable								
Household Items	22	12.2	14	17.3	4	19.0	40	14.1
Four Wheel Tractor	7	3.9	5	6.2	1	4.8	13	4.6
Two Wheel Tractor	33	18.2	28	34.6	6	28.6	67	23.7
Water Pump	16	8.8	8	9.9	2	9.5	26	9.2
Spraying Machine	76	42.0	43	53.1	8	38.1	127	44.9

App. 2.1.5-2 Ownership of Animals by Type of Irrigation Scheme

Land tenure	Muruthawela Reservoir	Liyangastota	Badagiriya	Total
Cows	147	29	5	181
Goats	4	23	4	31
Pigs	4	14		18
Poultry	48	15		63

App. 2.1.5-3 Housing Conditions by Type of Irrigation Scheme

Condition	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
HOUSING TYPE								
Permanent	129	64.5	62	72.1	13	61.9	204	66.5
Semi permanent	33	16.5	15	17.4	5	23.8	53	17.3
Temporary	34	17.0	8	9.3	2	9.5	44	14.3
Other	-	-	-	-	1	4.8	1	0.3
Not reported	4	2.0	1	1.2	-	-	5	1.6
Total	200	100.0	86	100.0	21	100.0	307	100.0
FLOOR								
Cement	142	71.0	72	83.7	17	80.9	231	75.2
Clay/mud	56	28.0	14	16.3	3	14.3	73	23.8
Other	1	0.5	-	-	1	4.8	2	0.7
Not reported	1	0.5	-	-	-	-	1	0.3
Total	200	100.0	86	100.0	21	100.0	307	100.0
ROOF								
Tiles	164	82.0	71	82.6	18	85.7	253	82.4
Asbestos	1	0.5	4	4.6	-	-	5	1.6
Metal sheets	4	2.0	-	-	1	4.8	5	1.6
Cadjan/straw	30	15.0	11	12.8	2	9.5	43	14.0
Not reported	1	0.5	-	-	-	-	1	0.4
Total	200	100.0	86	100.0	21	100.0	307	100.0
WALLS								
Brick/cabok	139	69.5	73	84.9	17	80.9	229	74.6
Cement	4	2.0	2	2.3	1	4.8	7	2.3
Wattle & daub	51	25.5	11	12.8	2	9.5	64	20.8
Other	5	2.5	-	-	1	4.8	6	2.0
Not reported	1	0.5	-	-	-	-	1	0.3
Total	200	100.0	86	100.0	21	100.0	307	100.0

**App.2.1.5-4 Availability of Basic Facilities of Water, Toilets and Electricity
by Type of Irrigation Scheme**

Type of facility	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
WATER SUPPLY								
Protected well	67	33.5	41	47.7	2	9.5	110	35.8
Unprotected well	58	29.0	15	17.4	4	19.0	77	25.1
Common dug/tube well	60	30.0	24	27.9	10	47.6	94	30.6
Stream/tank	8	4.0	1	1.2	1	4.8	10	3.3
Other	6	3.0	4	4.6	4	19.1	14	4.6
Not reported	1	0.5	1	1.2	-	-	2	0.6
Total	200	100.0	86	100.0	21	100.0	307	100.0
LATRINE								
Water seal	99	49.5	66	76.7	13	61.9	178	58.0
Pit	95	47.5	19	22.1	6	28.6	120	39.1
Public lat	2	1.0	1	1.2	-	-	3	1.0
None	3	1.5	-	-	2	9.5	5	1.6
Not reported	1	0.5	-	-	-	-	1	0.3
Total	200	100.0	86	100.0	21	100.0	307	100.0
COOKING FUEL								
Gas/electricity	3	1.5	3	3.5	-	-	6	2.0
Kerosine	14	7.0	4	4.6	-	-	18	5.9
Fuel wood	182	91.0	78	90.7	21	100.0	281	91.5
Not reported	1	0.5	1	1.2	-	-	2	0.6
Total	200	100.0	86	100.0	21	100.0	307	100.0
LIGHTING								
Electricity	49	24.5	38	44.2	9	42.9	96	31.3
Other	148	74.0	48	55.8	12	57.1	208	67.7
Not reported	3	1.5	-	-	-	-	3	1.0
Total	200	100.0	86	100.0	21	100.0	307	100.0

App. 2.1.5-5 Type of Illnesses Suffered by Members in Sample Farm Families During Last Year by Type of Irrigation Scheme

Illness	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Diarrhoea	14	9.7	5	9.3	-	-	19	9.0
Malaria	44	30.3	19	35.2	9	75.0	72	34.1
Fever	50	34.5	20	37.0	2	16.7	72	34.1
Respiratory illness	20	13.8	5	9.3	-	-	25	11.8
Infectious disease	18	12.4	2	3.7	-	-	20	9.5
Gastric-enteric disease	43	29.7	19	35.2	4	33.3	66	31.3
Scabies	6	4.1	4	7.4	2	16.7	12	5.7
Heart conditions	24	16.6	8	14.8	-	-	32	15.2
Fever	3	2.1	-	-	1	8.3	4	1.9
Snake bites	14	9.7	1	1.9	-	-	15	7.1
Accidents due to agro-chemicals	12	8.3	4	7.4	1	8.3	17	8.1
Other accidents	7	4.8	-	-	1	8.3	8	3.8
Other	8	5.5	2	3.7	-	-	10	4.7

App. 2.1.5-6 Source of Treatment by Type of Irrigation Scheme

Source	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Government hospital	108	54.0	46	53.5	13	61.9	167	54.4
Free dispensary/clinic	49	24.5	21	24.4	7	33.3	77	25.1
Private western medical practice	46	23.0	23	26.7	3	14.3	72	23.5
Ayurvedic medical practitioner	17	8.5	1	1.2	3	14.3	21	6.8
Other	2	1.0	1	1.2	-	-	3	1.0

App. 2.1.6-1 Cultivated Area of Paddy and Tenure by Type of Irrigation Scheme

Land tenure	Size of land holding (Acres)						Total	
	Muruthawela Reservoir		Liyangastota		Badagiriya			
	No.	%	No.	%	No.	%	No.	%
Owned	188.01	35.3	134.25	36.1	69.00	96.5	391.26	40.1
Leased out	5.50	1.0	-	-	2.00	2.8	7.50	0.8
Leased in	19.50	3.7	50.75	13.6	-	-	70.25	7.2
Encroached	3.01	0.6	-	-	-	-	3.01	0.3
Ande cultivation	281.00	52.8	183.90	49.4	-	-	464.90	47.6
Other	35.27	6.6	3.25	0.9	0.50	0.7	39.02	4.0
Total	532.29	100.0	372.15	100.0	71.50	100.0	975.94	100.0

Note: Leased out: to lease the cultivated land to other farmers in a short period of time, e.g. one season, without legal restrictions.

Leased in: to borrow the cultivated land from other farmers in a short period of time without legal restrictions.

App. 2.1.6-2 Ownership Status of Paddy Land Holding by Type of Irrigation Scheme

Ownership	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Purana villager	17	8.5	3	3.5	-	-	20	6.5
Original allottee	50	25.0	13	15.1	18	85.7	81	26.4
Successor	59	29.5	18	20.9	3	14.3	80	26.0
Purchased	6	3.0	5	5.8	-	-	11	3.6
Permit holder	10	5.0	4	4.7	-	-	14	4.6
Bethma system	3	1.5	2	2.3	-	-	5	1.6
Ande	55	27.5	41	47.7	-	-	96	31.3
Total	200	100.0	86	100.0	21	100.0	307	100.0

App. 2.1.6-3 Average Land Holding Size of Paddy and Tenure by Irrigation Scheme

Land tenure	Average size of land holding (Acres)		
	Muruthawela Reservoir	Liyangastota	Badagiriya
Owned	1.15	1.56	3.29
Leased out	0.04	-	0.10
Leased in	0.13	0.59	-
Encroached	0.02	-	-
Ande cultivation	1.54	2.14	-
Other	0.23	0.04	0.02

App. 2.1.6-4 Average Size (Acres) of Paddy Holding and Tenure by Type of Sub-units

Land tenure	LB Main	Urubokka	Kirama	Liyangastota LB	Liyangastota RB	Badagiriya
Owned	1.29	1.11	1.02	1.80	1.33	3.29
Leased out	0.04	0.09	-	-	-	0.10
Leased in	0.19	0.17	0.20	0.35	0.83	-
Encroached	0.05	-	-	-	-	-
Ande cultivation	0.22	2.78	1.50	1.31	2.97	-
Other	0.02	0.77	0.60	0.20	0.06	0.02

App. 2.1.6-5 Average Land Holding Size of Irrigated Highland and Tenure by Type of Irrigation Scheme

Land tenure	Average size of land holding (Acres)		
	Muruthawela Reservoir	Liyangastota	Badagiriya
Owned	0.15	0.27	0.10
Leased out	0.03	-	-
Leased in	-	0.01	-
Encroached	0.03	0.01	-

App. 2.1.6-6 Average Land Holding Size of Non-Irrigated Highland and Tenure by Type of Irrigation Scheme

Land tenure	Average size of land holding (Acres)		
	Muruthawela Reservoir	Liyangastota	Badagiriya
Owned	0.91	1.13	1.30
Leased out	-	0.09	-
Leased in	0.01	-	-
Encroached	0.14	0.60	-

App.2.1.7-1 Assistance to Women in Household Activities by Type of Irrigation Scheme

Helping members	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Cooking								
Husband	24	12.4	6	7.5	2	10.0	32	10.9
Female members	105	54.4	46	57.4	13	65.0	164	56.0
Male members	5	2.6	3	3.8	-	-	8	2.7
All members	19	9.9	7	8.8	2	10.0	28	9.6
None	40	20.7	18	22.5	3	15.0	61	20.8
Number reported	193	100.0	80	100.0	20	100.0	293	100.0
Household Work								
Husband	27	14.4	16	20.0	3	15.8	46	16.1
Female members	60	32.1	28	35.0	10	52.6	98	34.2
Male members	13	7.0	3	3.8	-	-	16	5.6
All members	53	28.3	23	28.7	6	31.6	82	28.7
None	34	18.2	10	12.5	-	-	44	15.4
Number reported	187	100.0	80	100.0	19	100.0	286	100.0
Drawing Water								
Husband	27	13.9	8	9.4	4	16.7	39	12.8
Female members	77	39.5	34	40.0	14	58.3	125	41.1
Male members	17	8.7	12	14.1	4	16.7	33	10.9
All members	42	21.5	14	16.5	2	8.3	58	19.1
None	32	16.4	17	20.0	-	-	49	16.1
Number reported	195	100.0	85	100.0	24	100.0	304	100.0
Collecting Fire Wood								
Husband	16	8.4	8	10.0	4	19.0	28	9.6
Female members	76	39.8	40	50.0	12	57.1	128	43.9
Male members	9	4.7	5	6.3	1	4.8	15	5.1
All members	33	17.3	7	8.7	3	14.3	43	14.7
None	57	29.8	20	25.0	1	4.8	78	26.7
Number reported	191	100.0	80	100.0	21	100.0	292	100.0

App.2.1.7-2 Membership in Women Organizations by Type of Irrigation Scheme

Organization/membership	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
EXISTENCE								
Yes	105	52.5	50	58.1	19	90.5	174	56.7
No	80	40.0	31	36.1			111	36.1
Not reported	15	7.5	5	5.8	2	9.5	22	7.2
Total	200	100.0	86	100.0	21	100.0	307	100.0
MEMBERSHIP								
Yes	45	42.9	19	38.0	7	36.8	71	40.8
No	60	57.1	31	62.0	12	63.2	103	59.2
Total	105	100.0	50	100.0	19	100.0	174	100.0

App.2.1.7-3 Income Generating Activities for Women by Type of Irrigation Scheme

Activity	Muruthawela Reservoir		Liyangastota		Badagiriya		Total	
	No.	%	No.	%	No.	%	No.	%
Mat weaving	14	32.5	2	9.5	1	16.7	17	24.3
Homestead	4	9.3	5	23.8	1	16.7	10	14.3
Cadjan weaving	11	25.6	3	14.3	-	-	14	20.0
Chena cultivation	2	4.7	1	4.8	-	-	3	4.3
Dress making	4	9.3	1	4.8	2	33.2	7	10.0
Small trade	2	4.7	4	19.0	-	-	6	8.6
Foreign employment	1	2.3	-	-	-	-	1	1.4
Government job	4	9.3	2	9.5	-	-	6	8.6
Casual labour	1	2.3	2	9.5	-	-	3	4.3
Animal husbandry	-	-	-	-	1	16.7	1	1.4
Tea box weaving	-	-	1	4.8	1	16.7	2	2.8
Total	43	100.0	21	100.0	6	100.0	70	100.0

APPENDIX-2.2 AGRO-ECONOMY

TABLE OF CONTENTS

		Page
2.2.1	Methodology	A2.2-1
2.2.2	Administrative Boundaries of Selected Three Scheme Areas	A2.2-4
2.2.3	Outline of Agricultural Sector in Scheme Areas	A2.2-4

LIST OF TABLES

App.2.2.2-1	Scheme Area-wise Administrative Boundaries	A2.2-4
App.2.2.3-1	DSD-wise Population Growth Rates	A2.2-5
App.2.2.3-4	DSD-wise Unemployment Rates	A2.2-5
App.2.2.3-6	DSD-wise Recipients under Poverty Alleviation Program	A2.2-6
App.2.2.3-8	Crop-wise Cultivated Areas by DSDs	A2.2-7
App.2.2.3-9	Cropping Intensity of Paddy	A2.2-8
App.2.2.3-23	Farmgate, Wholesale and Retail Prices of Paddy/Rice	A2.2-9
App.2.2.3-25	Wholesale and Retail Prices of OFCs at Pola	A2.2-9
App.2.2.3-26	Number of Polas and Location	A2.2-10
App.2.2.3-36	Wholesale and Retail Prices of Fertilizer and Agro-chemicals	A2.2-11
App.2.2.3-45	Wholesale and Retail Prices of Seed Paddy	A2.2-11
App.2.2.3-2	Population by Sex and Age (1994)	A2.2-13
App.2.2.3-3	Households and Average Family Size (1994)	A2.2-14
App.2.2.3-5	Labour Force (1994)	A2.2-15
App.2.2.3-7	Population by Educational Level (1994)	A2.2-16
App.2.2.3-10	Cropping Intensity of Paddy (1992/93 Maha and 1993 Yala)	A2.2-17
App.2.2.3-11	Target Cropped Area and Production of Paddy (1995)	A2.2-18
App.2.2.3-12	Target Cropped Area and Production of Paddy (1996)	A2.2-19
App.2.2.3-13	Target Area under Different Paddy Varieties (1995 and 1996)	A2.2-20
App.2.2.3-14	Sowing and Harvesting Periods of Paddy Cultivations (1994)	A2.2-21
App.2.2.3-15	Target Seed Transplanting Area (1995)	A2.2-22
App.2.2.3-16	Cropped Area and Production of Subsidiary Food Crops (1996) ..	A2.2-23
App.2.2.3-17	Target Cropped Area of Vegetables (1996)	A2.2-24
App.2.2.3-18	Channels of Paddy and Rice Distribution by Paddy Marketing Board in Hambantota	A2.2-25
App.2.2.3-19	Purchase and Sales Volume of Paddy/Rice by Paddy Marketing Board	A2.2-26
App.2.2.3-20	Channels of Paddy and Rice Distribution by Multi-purpose Co-operative Social in Hambantota District	A2.2-27
App.2.2.3-21	Channels of Paddy and Rice Distribution by Private	A2.2-28
App.2.2.3-22	Channels of Paddy and Rice Distribution by Private Rice	A2.2-28
App.2.2.3-24	Distribution Channels of Rice and Subsidiary Food Crops by Co-operative Wholesale Establishment in Hambantota District	A2.2-29
App.2.2.3-27	Agrarian Services Centres in Hambantota District	A2.2-30

App.2.2.3-28	Multi-purpose Co-operative Societies in Hambantota District	A2.2-31
App.2.2.3-29	Distribution Channels of Agricultural Inputs by Multi-purpose Co-operative Societies in Hambantota District	A2.2-32
App.2.2.3-30	Channels of Fertilizer Distribution by Ceylon Fertilizer Co., Ltd. in Hambantota District	A2.2-33
App.2.2.3-31	Channels of Agro-chemicals Distribution by Ceylon Petroleum Corporation (CEYPETCO) in Hambantota District	A2.2-33
App.2.2.3-32	Ceylon Fertilizer Co., Ltd. in Hambantota District	A2.2-34
App.2.2.3-33	Fertilizer Discount Rates (1995-96)	A2.2-35
App.2.2.3-34	Target Fertilizer Requirement (1996)	A2.2-36
App.2.2.3-35	Wholesale Prices of Fertilizers (1995-96)	A2.2-37
App.2.2.3-37	Distribution Channels of Seeds Paddy and Subsidiary Food Crops by Seed Farms in Hambantota District	A2.2-38
App.2.2.3-38	Seed Paddy Production in 1995/96 Maha (Bata-ata Seed Farm)	A2.2-39
App.2.2.3-39	Seed Production under Different Varieties (1995/96 Maha)	A2.2-40
App.2.2.3-40	Target Seed Paddy Requirement for Rural Seed Farms (1996)	A2.2-41
App.2.2.3-41	Seed Production of Subsidiary Food Crops (1995/96 Maha)	A2.2-42
App.2.2.3-42	Seed Production of Vegetables (1995/96 Maha)	A2.2-43
App.2.2.3-43	Seed Prices of Paddy and Subsidiary Food Crops (1995-96)	A2.2-44
App.2.2.3-44	Seed Prices of Vegetables (1995-96)	A2.2-44
App.2.2.3-46	Rice Mill and Storage Facilities Ownership by Paddy Marketing Board	A2.2-45
App.2.2.3-47	Utilization of Institutional Credits for Last Three Years	A2.2-46
App.2.2.3-48	Refusal of Loan and Reasons Therefor	A2.2-47
App.2.2.3-49	Utilization of Non-institutional Credits	A2.2-48
App.2.2.3-50	Saving Habits	A2.2-49
App.2.2.3-51	Crop Insurance	A2.2-50

APPENDIX 2.2 AGRO-ECONOMY

2.2.1 Methodology

Recent trends in the concept of development planning, specially for the rural area, where source of livelihood entirely depends on the agricultural sector, emphasize the need for reliable statistical information available not only at lower administrative division levels, e.g. Grama Niladari Divisions (GNDs), but at Divisional Secretariat Divisions (DSDs). In this respect the Phase II study was carried out with the due attention paid to collection of more detailed up-to-date information on the agricultural sector in Hambantota District at the DSDs and/or GND levels.

The study consisted mainly of literature review and collection of the latest reliable data together with a sample survey in the selected three scheme areas, the details of which will be described later; however, it was sometimes severely constrained by the lack of background information and published data on the present situation of the areas. The data collection included interviews with officials from various departments as well as managers from the private sector. Data collected through the study were supplementary to data from the Phase I studies and reports to outline regional features of each scheme area in respect of agricultural economy on a DSD basis.

The data and information obtained through interviews and literature collection are summarized below.

Data and Information	Major Source	Content
(1) Socio-economic Indicators		
1) Population, Households, etc.	Divisional Secretariats, IRDP, Regional Development Division (Colombo)	No. of population, households, labour force, employed and unemployed population and households
2) Education	Regional Education Offices	No. of schools and school participation rates
(2) Agricultural Sector		
1) Cropped Area and Production, Cost of Production, etc.	Department of Agriculture, Mahaweli Economic Agency, CRE and RE of Irrigation Department	Cropped areas, yields and production of paddy, green gram, cowpea, maize, kurakkan, gengelly, green chillies, brinjal, long beans, okura, bitter gourd and snake gourd; production costs of paddy, chillies, red onion, banana, vegetables and yams
2) Agrarian Services	Departments of Agrarian Services (Hambantota and Colombo)	Location of agrarian services centres and their activities
3) Farm Size and Land Tenure	Divisional Secretariats, Department of Agrarian Services	Agrarian services division-wise farm sizes and land tenures
4) Annual Farm Income	Department of Agriculture, Divisional Secretariats, Farmers	Farm income, non-farm income and expenditure
5) Rice Mills	Paddy Marketing Board, Multi-purpose Co-operative Societies, Private Rice Mills	Location of rice mills owned by Paddy Marketing Board and Multi-purpose Co-operative Societies, milling capacity, storage capacity and milling cost

6) Rural Credit	Department of Agrarian Services, Multi-purpose Co-operative Societies, Co-operative Rural Banks, Bank of Ceylon, Regional Rural Development Banks	Location of Co-operative Rural Banks, interest rates for loans and deposits, recovery rate and their activities
7) Coconut Cultivation	Coconut Cultivation Board	Location of branch offices of Coconut Cultivation Board, their activities, acreage of coconut cultivation and subsidy schemes
8) Minor Export Crops	Department of Export Agriculture	Activities of Export Agricultural Department, acreage of cultivation of coffee, cinnamon, pepper, clove and citronella, and subsidy schemes
9) Pola Markets	Divisional Secretaries, Polas	Location and business days of polas
10) Rice Import	Trade & Investment Lanka Limited (Colombo)	CIF/C&F price of imported rice, import duty, domestic taxes and distribution channel
11) Paddy/Rice Transactions	Paddy Marketing Board, Multi-purpose Co-operative Societies, Private Paddy Collectors and Traders	Purchasing and sales volume of paddy/rice and their prices
12) By-products Transactions	Ceylon Agro-industries Limited (Colombo), Ceylon Grain Elevators Limited (Colombo), Private Brick Factories	Prices of chaff and bran, and distribution channel
13) Fertilizer Import	National Fertilizer Secretariat (Colombo) Ceylon Fertilizer Co., Ltd. (Colombo)	CIF/C&F prices of urea, sulphate of ammonia (SA), triple super phosphate (TSP), murate of potash (MOP), V-mixture, top dressing mixture (TDM) and NPK, import duties, domestic taxes and distribution channel
14) Agro-chemicals Import	Ceylon Petroleum Corporation (Colombo)	CIF/C&F prices of monocrotophos, ceyphos and 3-4DAP, purchase price of domestic MPCA, import duties, domestic taxes and distribution channel
(3) Marketing System (including prices of agricultural crops and inputs)		
1) Seed Paddy and Other Seeds	Rice Research Station, Bata-ata Seed Farm, Middeniya Government Farm, Multi-purpose Co-operative Societies, Department of Agrarian Services	Distribution channel of seed paddy and vegetable seeds such as bitter gourd, snake gourd, capsicum, cowpea, brinjal, okura, cucumber, tomato and chillies, their wholesale and retail prices, and sales volume
2) Fertilizers	Branch Offices of Ceylon Fertilizer Co., Ltd., Multi-purpose Co-operative Societies, Department of Agrarian Services	Distribution channel of urea, SA, TSP, MOP, V-mixture, TDM and NPK, wholesales and retail prices and sales volume

3) Agro-chemicals	Ceylon Petroleum Corporation (Colombo), Authorized Private Wholesaler, Multi-purpose Co-operative Societies, Department of Agrarian Services	Distribution channel of monocrotophos, ceyphos, 3-4DPA and MPCA, wholesales and retail prices and sales volume
4) Tractors	Multi-purpose Co-operative Societies, Department of Agrarian Services, Private Dealer	No. of tractors sold, hired prices of 2-wheel and 4-wheel tractors, sales price and monthly maintenance cost
5) Rice/Paddy	Paddy Marketing Board, Co-operative Wholesale Establishment, Multi-purpose Co-operative Societies, Private Marketing Agents, Farmers	Distribution channel of rice/paddy, wholesales and retail prices and sales volume
6) OFCs (Green Gram, Cowpea, Chillies, Banana, Vegetables)	Co-operative Wholesale Establishment, Retailers, Farmers	Distribution channels of green gram, cowpea, dry chillies, banana and vegetables such as green chillies, brinjal, long beans, okura, bitter gourd and snake gourd, wholesale and retail prices and sales volume of green gram, cowpea and dry chillies

(4) Conversion Factor and Import Duty

The above information and data obtained will be used for project evaluation. The consequent EIRR will, therefore, vary with changes in economic factors such as project cost components, prices of agricultural crops and inputs, crop diversification, irrigable area, etc.

1) Conversion Factor for Road Transport	Road Development Authority (Colombo)	Estimation of conversion factor for road transport
2) Conversion Factor for Electricity	Ceylon Electricity Board (Colombo)	Estimation of conversion factor for electricity
3) Customs Duties	Customs Sri Lanka (Colombo)	Duties and turnover taxes of fertilizers and agro-chemicals, and defense levy

In addition to the interviews above, a detailed sample survey was conducted based on the submission of questionnaires to 307 sample families within the scheme areas in terms of respective farmer organization areas, i.e. 86 families for the Liyangastota Scheme, 200 for the Muruthawela Reservoir Scheme and 21 for the Badagiriya Scheme. During the survey period due consideration taken to collect the true opinions from the interviewees was the absence of officials and farmer leaders from the interviews. With respect to agricultural economy, the questionnaire included various subjects such as ownership of animals, saving habits, utilization status of institutional and non-institutional credits, household income and expenditures, crop production, farm income, agricultural input use and so forth.

2.2.2 Administrative Boundaries of Selected Three Scheme Areas

Hambantota, the largest administrative district in the Southern Province is situated in the southern corner of Sri Lanka. It has a land area of 2,513 square kilometers (1994). The population is estimated at 518,366, out of which 49.7% are males and 50.3% are females resulting in a sex ratio of 101 females per 100 males. The population is predominantly rural (90%) with an average density of 206 persons per square kilometers as compared to 164 persons in the 1981 census. The district comprises 11 Divisional Secretariat Divisions (DSDs) and 576 Grama Niladari Divisions (GNDs).

Scheme area-wise administrative boundaries are shown in App. 2.2.2-1.

App. 2.2.2-1 Scheme Area-wise Administrative Boundaries

Scheme	DSD (No.)	(Name)	GND
Liyangastota	2	Ambalantota, Hambantota	35
Muruthawela Reservoir	5	Beliatta, Okewela, Tangalle, Weeraketiya, Angunakolapelessa	75
Badagiriya	1	Hambantota	6

Note: The number of GND was identified through presentation of the benefit area maps to respective DSD offices.

2.2.3 Outline of Agricultural Sector in Scheme Areas

(1) Background Social Factors and Issues

Some of the background factors coherent to the development of the agricultural sector of each scheme area are outlined as follows.

1) High Population Growth

DSD-wise population growth rates are shown in App. 2.2.3-1.

App. 2.2.3-1 DSD-wise Population Growth Rates

Scheme	DSD	1981	1994	Growth Rate (%)
Liyangastota	Ambalantota	54,600	57,745	0.4
	Hambantota	-	44,930	
		(52,213)	(71,245)	2.8
Muruthawela Reservoir	Weeraketiya	-	52,762	
	Okewela	(67,712)	(73,306)	0.5
	Angunakolapelessa	34,345	41,538	1.6
	Tangalle	55,817	68,458	1.7
	Beliatta	48,636	50,236	2.5
Badagiriya	Hambantota	-	44,930	
		(52,213)	(71,245)	2.8

It should be noted that figures in parenthesis shows that for the subject DSD in combination with other area contained within the said administrative unit at the time of the the 1981 census, e.g. the present Hambantota DSD was combined with the present Lunugamwehera DSD, and the present Okewela DSD was included in the Weeraketiya DSD at that time. The annual population growth for each scheme area on a DSD basis was estimated at between 0.4% and 2.8%, higher than other regions. (See App.2.2.3-2 and App. 2.2.3-3).

2) High Unemployment Rate

DSD-wise unemployment rates are shown in App. 2.2.3-4.

App. 2.2.3-4 D.S.D-wise Unemployment Rates

Scheme	DSD	Total Labour Force	Unemployed	Unemployment Rate (%)
Liyangastota	Ambalantota	19,974	4,020	20.1
	Hambantota	14,132	2,396	17.0
Muruthawela Reservoir	Weeraketiya	15,982	3,591	22.5
	Okewela	6,124	1,476	24.1
	Angunakolapelessa	16,966	1,846	10.9
	Tangalle	23,268	3,331	14.3
	Beliatta	18,242	3,255	17.8
Badagiriya	Hambantota	14,132	2,396	17.0

The unemployment rates are between 10.9% and 24.1% of the labour force, which are substantially higher than the national average of about 14% (see App. 2.2.3-5); and are particularly high among the youth (the age group of 15-24 years), showing

unemployment rates between 41% and 45% as compared to the national average of 32-38%. A large portion of the unemployed is also educated and female.

3) High Poverty Level

DSD-wise recipients under the poverty alleviation programme (1996) are shown in App. 2.2.3-6.

App. 2.2.3-6 DSD-wise Recipients under Poverty Alleviation Programme

Scheme	DSD	Households (No.)	Samurdi (No.)	Poverty Level (%)
Liyangastota	Ambalantota	12,412	7,206	58.1
	Hambantota	9,414	2,624	27.9
Muruthawela	Weeraketiya	11,753	10,337	88.0
Reservoir	Okewela	4,528	3,193	70.5
	Angunakolapelessa	9,978	6,529	65.4
	Tangalle	14,266	4,920	34.5
	Beliatta	12,835	10,607	82.6
Badagiriya	Hambantota	9,414	2,624	27.9

The poverty level is high at 88.0 % in Weeraketiya DSD wherein a part of the Muruthawela Reservoir Scheme lies and is low at 27.9% in Hambantota DSD wherein the Badagiriya Scheme is located.

4) Economic and Social Infrastructures

a) Rural Roads

In the scheme areas, trucks overloaded with agricultural produce and inputs have caused road surface damage such as pot-holes, and at many locations pavement materials are exposed due to a combination of poor maintenance and repair and inadequate drainage. The Land Commissioners Department is responsible for maintenance of linking feeder roads, while channel roads are maintained by the Irrigation Department.

The bus services including public and private operations play a crucial role in the public transport system in the rural area. 2-wheel and 4-wheel tractors available in the scheme areas are supplementary to road transport.

b) Water Supply

Only 22% of the district population are benefitted by piped water and 45% rely on an unprotected water sources. Water supply coverage by unprotected water sources is high in Angunakolapelessa DSD wherein the

Muruthawela Reservoir Scheme is partly located, with beneficiaries totaling 85%, while the same is low at 39% in Hambantota DSD wherein the Badagiriya Scheme is situated.

c) Education

Shortage of teachers and school buildings due to excessive pressure of the student population have caused serious problems associated with the present educational status. Poor road network and low incomes discourage the school participation especially in the two DSDs of Okewela and Weeraketiya wherein the Muruthawela Reservoir Scheme is partly located (see App. 2.2.3-7). Great contribution would be made to avoid such poor accessibility and serious economic constraints through implementation of the Schools Mid-day Meal Programme and the Poverty Alleviation Programme.

d) Health

District hospitals, dispensaries including the traditional Ayurvedic treatment and clinics have failed to function properly to cater to the needs of the rural population due to inadequate medical facilities and poor road network and public transport system.

(2) Present Status of Agricultural Sector and Some Issues

The present status of the agricultural sector and its related issues in each scheme area on a DSD basis are briefly summarized as follows.

1) Crop-wise Cultivated Areas

Crop-wise cultivated areas by DSDs (1992/93 Maha season) are shown in App. 2.2.3-8.

App. 2.2.3-8 Crop-wise Cultivated Areas by D.S.Ds

Scheme	DSD	Total (ha)	Paddy (%)	MEC (%)	MIEC (%)	SFC (%)	Veget. (%)	Fruits (%)
Liyangastota	Ambalantota	9,721	40.8	7.7	0.4	3.3	3.9	6.9
	Hambantota	5,544	52.3	5.1	2.7	13.9	4.4	2.2
Muruthawela Reservoir	Weeraketiya	11,611	20.7	50.5	6.2	3.4	2.6	16.2
	Okewela	2,880	24.3	46.2	11.8	0.5	0.5	9.4
	Angunakolapelessa	6,707	33.7	19.2	1.8	11.1	10.4	10.7
	Tangalle	8,000	20.2	33.6	3.7	5.5	9.7	4.8
	Beliatta	7,537	21.8	59.5	7.7	0.3	1.5	10.2
Badagiriya	Hambantota	5,544	52.3	5.1	2.7	13.9	4.4	2.2

MEC, MIEC and SFC in the above table indicate major export crops, minor export crops and subsidiary food crops, respectively. The above table shows some regional cultivation patterns on a DSD basis under which the DSD areas wherein both the Liyangastota and the Badagiriya Schemes lie take a predominant position in paddy cultivation, while the greater part of the DSD areas for the Muruthawela Reservoir Scheme is given to the cultivation of major export crops (especially coconut) followed by paddy cultivation. On this regional background, scheme-wise crop cultivated areas are entirely based on the results of the baseline survey.

2) Cropping Intensity of Paddy

Cropping intensity of paddy in major irrigation schemes on a DSD basis (1992/93 Maha and 1993 Yala seasons) are tabulated in App. 2.2.3-9.

App. 2.2.3-9 Cropping Intensity of Paddy

Scheme	DSD	Cultivated Area (ha)	Cropped Area (ha)		Cropping Intensity (%)		
			Maha	Yala	Maha	Yala	Total
Liyangastota	Ambalantota	3,352	3,352	3,352	100.0	100.0	200.0
	Hambantota	1,981	1,972	1,276	99.5	64.4	163.9
Muruthawela Reservoir	Weeraketiya	1,404	1,151	1,090	82.0	77.6	159.6
	Okewela	200	200	187	100.0	93.5	193.5
	Angunakolapelessa	1,848	1,259	1,224	68.1	66.2	134.3
	Tangalle	1,340	1,224	742	91.3	55.4	146.7
	Beliatta	654	592	175	90.5	26.8	117.3
Badagiriya	Hambantota	1,981	1,972	1,276	99.5	64.4	163.9

Average cropping intensity for paddy exhibits a relatively low rate for the Muruthawela Reservoir Scheme area due to inadequacy of irrigation water, while the Liyangasotota Scheme area shows a high value of 200% in Ambalantota DSD (see App. 2.2.3-10).

3) Crop Production and Yield

The latest information and data obtained from the Department of Agriculture in Hambantota during this study period are shown in App. 2.2.3-11 through App. 2.2.3-17.

4) Agricultural Marketing

In the scheme areas, agricultural marketing, especially for agricultural produce is almost entirely controlled by private traders and dealers who frequently grant credit to farmers at a higher interest rate than institutional banks, though the Paddy Marketing Board (PMB) and Multi-purpose Co-operative Societies (MPCSs) are involved in paddy/rice marketing (see App. 2.2.3-18 through App. 2.2.3-20). Private traders, who buy the surplus paddy (white) in large quantity, e.g. 30-50 t/day for a 1-1.5 month

period, at a higher price (Rs 8.0-9.0/kg) than the guaranteed price (Rs 7.67/kg inclusive of transport cost), transport the paddy to private millers mainly in Colombo (see App. 2.2.3-21 and App. 2.2.3-22).

Farmgate, wholesale and retail prices of paddy/rice are tabulated in App. 2.2.3-23.

App. 2.2.3-23 Farmgate, Wholesale and Retail Prices of Paddy/Rice

Paddy/Rice	Farmgate (Rs/kg)	Wholesale (Rs/kg)	Retail (Rs/kg)
White	7.42 - 9.0	14.0	15.0 - 15.5
Red	9.0 - 10.0	15.0 - 15.5	16.5 - 17.5

It is a general trend that prices of paddy and OFCs decrease considerably during the harvesting periods due to non-availability of appropriate storage facilities which can ensure the quality of agricultural produce with a better price. This situation leads to large scale stocking by traders who later release their stocks to the large consuming areas at higher prices. CWE is also involved in the purchases of OFCs (see App. 2.2.3-24).

Along with the absence of floor prices excluding some pulses, OFCs experience significant price fluctuations at the farm gate and polas.

Wholesale and retail prices of OFCs at Pola are shown in App. 2.2.3-25.

App.2.2.3-25 Wholesale and Retail Prices of OFCs at Pola

OFC	Wholesales (Rs/kg)	Retail (Rs/kg)
Green Chillies	14-20	20-24
Dry Chillies	-	120-130
Brinjal	5-7	6-10
Long Beans	10-12	15-24
Okura	7	10-12
Bitter Gourd	10-12	12-16
Snake Gourd	7-8	10-14

The number of polas and their locations by DSD are shown in App. 2.2.3-26.

App. 2.2.3-26 Number of Polas and Location

Scheme	DSD	No. of Polas	Location
Liyangastota	Ambalantota	4	Ambalantota, Hungama, Barawakumbuka, Mamadala
	Hambantota	2	Hambantota, Siriyagama
Muruthawela Reservoir	Weeraketiya	4	Weeraketiya, Julampitiya, Morayaya, Meegas Ara
	Okewela	1	Sumihirigama
	Angunakolapelessa	2	Angunakolapelessa, Debokkawa
	Tangalle	5	Tangalle, Ranna, Wadugala, Netolpitiya, Vitharandeniya
	Beliatta	3	Beliatta, Godakumbura, Getamanna
Badagiriya	Hambantota	2	Hambantota, Siriyagama

Agricultural inputs such as fertilizers and agro-chemicals, which are widely applied to paddy fields with frequent overuse of weedicides, are mostly supplied by Agrarian Services Centres (ASC), Multi-purpose Co-operative Societies (MPCSs) and their outlets scattered over the district (see App. 2.2.3-27 through App. 2.2.3-29). The Liyangastota Scheme area is serviced by two ASCs of Ambalantota and Lunama and Hungama MPCS, the Muruthawela Reservoir Scheme area by three ASCs of Angunakolapelessa, Meegas Ara and Udayala and four MPCSs of Tangalle, Beliatta, Walasmulla and Weeraketiya, and the Badagiriya Scheme area by Badagiriya ASC and Hambantota MPCS.

The impact of the 30% fertilizer subsidy which was reintroduced by the government since the 1994/95 Maha season was reflected in a rapid increase in fertilizer sales. There was also a gradual increase in the application of straight fertilizers rather than compound fertilizers consequent to the government recommendation of its advantage to farmers in accordance with the National Policy Framework.

Distribution channels of fertilizer and agro-chemicals are illustrated in App. 2.2.3-30 and App. 2.2.3-31, and wholesale and retail prices of fertilizer (see App. 2.2.3-32 through App. 2.2.3-35) and agro-chemicals are summarized in App. 2.2.3-36.

App. 2.2.3-36 Wholesale and Retail Prices of Fertilizer and Agro-chemicals

Agricultural Inputs	Wholesale	Retail
<u>Fertilizer (Rs/kg)</u>		
Urea	9.26	10.20
TSP	10.46	11.14
MOP	9.66	10.34
V-Mixture	10.48	10.76
TDM	9.70	9.94
<u>Agro-chemicals</u>		
Monocrotophos (Rs/400 ml)	243	270
Ceyphos (Rs/400 ml)	296	328
3-4 DPA (Rs/31)	665	738
MPCA (Rs/400 ml)	77	85

For all schemes, seed paddy and other seeds are produced by government seed farmers (see App. 2.2.3-37 through App. 2.2.3-44) and supplied to farmers by institutional organizations such as ASCs, MPCs and sometimes private dealers; when shortage of seed paddy is seen or procurement cannot be made due to economic problems, however, farmers either use what is available to them or borrow their requirements from others at high interest rates ranging between 50-100%. As most marginal farmers are compelled to prefer this sort of borrowing to buying their seed requirements from the institutional organizations, some rich farmers have found lending seeds a way of earning additional income.

Wholesale and retail prices of seed paddy are shown in App. 2.2.3-45.

App. 2.2.3-45 Wholesale and Retail Prices of Seed Paddy

Seed Paddy	Wholesales (Rs/kg)	Retail (Rs/kg)
Registered	11.86	12.70
Certified	11.43	12.22

The Paddy Marketing Board owns 3 rice mills (Ambalantota, Kachigala Ara and Lunugamwehera) in the district (see App. 2.2.3-46). The first two mills are located in the benefit area of the Liyangastota Scheme. However, due to non-availability of sufficient stocks of paddy, only the Kachigala Ara mill has been put under proper operation, while the others remain closed. This situation indicates that the Paddy Marketing Board (the public sector) has failed in competition with private traders and dealers (the private sector).

One of the major problems pertaining to marketability is that all the schemes have suffered from long and costly transport linkages due to remoteness from large consumption areas, e.g. 240km away from Colombo and 120 km from Galle. This has resulted in poor marketing performance in the agricultural sector. The other problem

includes the poor availability of economic infrastructure as a means of improving the investment environment in rural areas.

5) Rural Credit

Farmers in the scheme areas have an access to institutional credit facilities granted by Agrarian Services Centres with an interest rate of 10% /season, Co-operative Rural Banks and state banks such as the Bank of Ceylon and Regional Rural Development Banks, but are more inclined towards informal credit sources to avoid the formal procedures including matters of guarantors, approval and procedural delays (see App. 2.2.3-47 through App. 2.2.3-50). However, private money lenders' interest rates are higher than institutional rates. Paddy production is not so attractive in terms of profitability but is the minimum human need at the subsistence level; however, institutional loan recovery rates are low even during average seasons and much lower during seasons of poor harvest. Although it is compulsory to insure crops when loans are granted by institutional banks, the crop insurance schemes introduced by the Agricultural Insurance Board have not been able to improve the above situation (see App. 2.2.3-51).

6) Livestock Industry

A relatively thriving livestock industry is seen in the three DSDs of Ambalantota, Hambantota and Tissamaharama wherein the Liyangastota and the Badagiriya Scheme lie. In these areas, the present farming system benefits from paddy cultivation with draft power and organic fertilizer provided by cattle and buffalo while the animals are fed on stubble left behind in the paddy fields during the fallow season.

The most important problems encountered by livestock development includes insufficient availability of grazing land. Lack of sufficient grazing land for animals has often resulted in animal intrusion into paddy fields, chena cultivation land and home gardens, and thereby causing a considerable amount of crop damage which can in turn develop unfavourably to conflicts between herdsman and cultivators, although most of farmers are cultivator-cum-herdsman.

Poor marketability of milk products appears to be another constraint to livestock development potential in the areas.

App. 2.2.3-2 Population by Sex and Age (1994)

Scheme	D.S. Division	Population			Age Group		
		Total	Male	Female	0-9	10-59	Over 60
Liyangastota	Ambalantota	57,744 (100.0)	28,633 (49.6)	29,111 (50.4)	12,319 (21.3)	41,076 (71.1)	4,350 (7.6)
	Hambantota	44,930 (100.0)	21,881 (48.7)	23,049 (51.3)	10,584 (23.6)	31,859 (70.9)	2,487 (5.5)
Muruthawela	Weeraketiya	52,762 (100.0)	25,604 (48.5)	27,158 (51.5)	11,480 (21.7)	36,657 (69.5)	4,625 (8.8)
	Okewela	19,544 (100.0)	9,274 (47.5)	10,270 (52.5)	4,162 (21.3)	13,210 (67.6)	2,172 (11.1)
Reservoir	Angunakolapeessa	41,538 (100.0)	21,475 (51.7)	20,063 (48.3)	9,412 (22.6)	29,268 (70.5)	2,858 (6.9)
	Tangalle	68,458 (100.0)	32,620 (47.6)	35,838 (52.4)	13,405 (19.6)	48,620 (71.0)	6,433 (9.4)
	Beliatta	50,236 (100.0)	24,883 (49.5)	25,353 (50.5)	7,876 (15.7)	36,673 (73.0)	6,187 (12.3)
Badagiriya	Hambantota	44,930 (100.0)	21,881 (48.7)	23,049 (51.3)	10,584 (23.6)	31,859 (70.9)	2,487 (5.5)
	Hambantota District	518,366 (100.0)	257,515 (49.7)	260,851 (50.3)	113,071 (21.8)	363,436 (70.1)	41,859 (8.1)
Southern Province		2,226,225 (100.0)	1,089,672 (48.9)	1,136,553 (51.1)	445,028 (20.0)	1,557,746 (70.0)	223,451 (10.0)
	Sri Lanka	14,945,086 (100.0)	7,368,621 (49.3)	7,576,465 (50.7)	2,771,925 (18.5)	10,950,326 (73.3)	1,222,833 (8.2)

Note: Figures in parenthesis indicate comparison with total as 100.

Source: "Demographic Survey 1994", Department of Census and Statistics, Ministry of Finance, Planning, Ethnic Affairs and National Integration, 1995.

App. 2.2.3-3 Households and Average Family Size (1994)

Scheme	D.S. Division	Housing Units (No.)	Households (No.)	Average Family Size (No.)
Liyangastota	Ambalantota	11,831	12,141	4.76
	Hambantota	9,225	9,328	4.82
Muruthawela Reservoir	Weeraketiya	10,231	10,231	5.16
	Okewela	3,857	3,882	5.03
	Angunakolapelessa	8,641	8,733	4.76
	Tangalle	13,710	14,827	4.62
Badagiriya	Beliatta	10,084	10,770	4.66
	Hambantota	9,225	9,328	4.82
Hambantota District		106,889	109,806	4.72
Southern Province		462,178	475,370	4.68
Sri Lanka		3,175,901	3,274,590	4.56

Source: "Demographic Survey 1994", Department of Census and Statistics, Ministry of Finance, Planning, Ethnic Affairs and National Integration, 1995.

App. 2.2.3-5 Labour Force (1994)

Scheme	D.S. Division	Population (Over 10 Years)	Labour Force	Labour Contribution Rate (%)	Employed	Unemployed	Non-Labour Force
Liyangastota	Ambalantota	45,426	19,974	44.0	15,953 (79.9)	4,021 (20.1)	25,452
	Hambantota	34,346	14,132	41.1	11,736 (83.0)	2,396 (17.0)	20,214
Muruthawela	Weeraketiya	41,282	15,982	38.7	12,391 (77.5)	3,591 (22.5)	25,300
Reservoir	Okewela	15,382	6,124	39.8	4,648 (75.9)	1,476 (24.1)	9,258
	Angunakolapelessa	32,126	16,966	52.8	15,120 (89.1)	1,846 (10.9)	15,160
	Tangalle	55,053	23,268	42.3	19,937 (85.7)	3,331 (14.3)	31,785
	Beliatta	42,860	18,242	42.6	14,986 (82.2)	3,256 (17.8)	24,618
Badaguniya	Hambantota	34,346	14,132	41.1	11,736 (83.0)	2,396 (17.0)	20,214
	Hambantota District	405,295	181,365	44.7	153,307 (84.5)	28,058 (15.5)	223,930
	Southern Province	1,781,197	794,440	44.6	652,519 (82.1)	141,921 (17.9)	986,757
	Sri Lanka	12,173,159	5,756,290	47.3	4,929,061 (85.6)	827,229 (14.4)	6,416,869

Source: 'Demographic Survey 1994', Department of Census and Statistics, Ministry of Finance, Planning, Ethnic Affairs and National Integration, 1995.

App. 2.2.3-7 Population by Educational Level (1994)

Scheme	D.S. Division	Total	Educational level				No Schooling
			Grade 1-10	GCE(O/L/A/L)	Under/Post Graduation		
Liyangastota	Ambalantota	52,167 (100.0)	38,817 (74.4)	8,695 (16.7)	613 (1.2)	4,042 (7.7)	
	Hambantota	41,420 (100.0)	33,443 (80.7)	4,228 (10.2)	351 (0.9)	3,398 (8.2)	
Muruthawela Reservoir	Weeraketiya	49,685 (100.0)	35,938 (72.3)	6,099 (12.3)	511 (1.0)	7,136 (14.4)	
	Okewela	18,364 (100.0)	11,759 (64.0)	3,594 (19.6)	381 (2.1)	2,630 (14.3)	
	Angunakolapelessa	38,614 (100.0)	30,326 (78.5)	4,307 (11.2)	236 (0.6)	3,745 (9.7)	
	Tangalle	59,577 (100.0)	43,736 (73.4)	10,525 (17.7)	623 (1.0)	4,693 (7.9)	
	Beliatta	48,323 (100.0)	33,910 (70.2)	9,936 (20.6)	505 (1.0)	3,972 (8.2)	
Badagiriyva	Hambantota	41,420 (100.0)	33,443 (80.7)	4,228 (10.2)	351 (0.9)	3,398 (8.2)	
	Hambantota District	481,467 (100.0)	359,949 (74.8)	66,225 (13.7)	4,325 (0.9)	50,968 (10.6)	
Southern Province		2,097,179 (100.0)	1,513,998 (72.2)	369,847 (17.6)	23,180 (1.1)	190,154 (9.1)	
Sri Lanka		14,068,619 (100.0)	9,888,755 (70.3)	2,756,517 (19.6)	180,321 (1.3)	1,243,026 (8.8)	

Note: Figures in parenthesis indicate comparison with total as 100.

Source: "Demographic Survey 1994"; Department of Census and Statistics, Ministry of Finance, Planning, Ethnic Affairs and National Integration, 1995.

App. 2.2.3-10 Cropping Intensity of Paddy (1992/93 Maha and 1993 Yala)

Scheme	D.S. Division	Type of Irrigation	Cultivated Area (ha)			Harvested Area (ha)			Cropping Intensity (%)			Crop Failure Area (ha)			Harvest Rate (%)			Degree of Crop Failure (%)			
			Area (ha)	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total
Liyangastota	Ambalantota	Major	3,352	3,352	6,704	3,352	3,335	6,687	100.0	100.0	200.0	0	17	17	100.0	99.5	99.7	0	0.5	0.3	
		Minor	615	442	863	442	421	863	71.9	68.5	140.3	0	0	0	100.0	100.0	100.0	0	0	0	
		Rainfed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	3,967	3,794	7,567	3,794	3,756	7,550	95.6	95.1	190.7	0	17	17	100.0	99.5	99.8	0	0.5	0.2	
Muruthawela Reservoir	Wernakotya	Major	1,981	1,972	3,248	1,971	1,273	3,244	99.5	64.4	164.0	1	3	4	99.9	99.8	99.9	0.1	0.2	0.1	
		Minor	919	561	561	529	-	529	61.0	-	61.0	32	-	32	94.3	-	94.3	5.7	-	5.7	
		Rainfed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Total	2,900	2,533	3,809	2,500	1,273	3,773	87.3	44.0	131.3	33	3	36	98.7	99.8	99.1	1.3	0.2	0.9	
Okewela	Wernakotya	Major	1,404	1,151	1,090	1,146	1,090	2,236	82.0	77.6	159.6	5	0	5	99.6	100.0	99.8	0.4	0	0.2	
		Minor	785	725	257	696	257	953	92.4	32.7	125.1	29	0	29	96.0	100.0	97.0	4.0	0	3.0	
		Rainfed	209	175	9	161	9	170	83.7	4.3	88.0	14	0	14	92.0	100.0	92.4	8.0	0	7.6	
		Total	2,398	2,051	1,356	2,003	1,356	3,359	85.5	56.5	142.1	48	0	48	97.7	100.0	98.6	2.3	0	1.4	
Angunakolapelessa	Tangalle	Major	200	200	387	200	187	387	100.0	93.5	193.5	0	0	0	100.0	100.0	100.0	0	0	0	
		Minor	248	247	72	247	72	319	99.6	29.0	128.6	0	0	0	100.0	100.0	100.0	0	0	0	
		Rainfed	252	233	40	231	40	271	92.5	15.9	108.3	2	0	2	99.1	100.0	99.3	0.9	0	0.7	
		Total	700	680	999	678	999	977	97.1	42.7	139.9	2	0	2	99.7	100.0	99.8	0.3	0	0.2	
Belata	Hambantota	Major	1,848	1,259	1,224	1,259	1,224	2,483	68.1	66.2	134.4	0	0	0	100.0	100.0	100.0	0	0	0	
		Minor	396	285	214	285	214	499	72.0	54.0	126.0	0	0	0	100.0	100.0	100.0	0	0	0	
		Rainfed	18	2	2	2	2	4	11.1	11.1	22.2	0	0	0	100.0	100.0	100.0	0	0	0	
		Total	2,262	1,546	1,440	1,546	1,440	2,986	68.3	63.7	132.0	0	0	0	100.0	100.0	100.0	0	0	0	
Balagnya	Hambantota	Major	1,340	1,224	742	1,224	742	1,966	91.3	55.4	146.7	0	0	0	100.0	100.0	100.0	0	0	0	
		Minor	263	118	41	79	40	119	44.9	15.6	60.5	39	1	40	66.9	97.6	74.8	33.1	2.4	25.2	
		Rainfed	14	5	3	5	3	8	35.7	21.4	57.1	0	0	0	100.0	100.0	100.0	0	0	0	
		Total	1,617	1,347	786	1,308	785	2,093	83.3	48.6	131.9	39	1	40	97.1	99.9	98.1	2.9	0.1	1.9	
Hambantota District	Hambantota	Major	654	592	175	589	174	763	90.5	26.8	117.3	3	1	4	99.5	99.4	99.5	0.5	0.6	0.5	
		Minor	483	342	67	340	67	407	70.8	13.9	84.7	2	0	2	99.4	100.0	99.5	0.6	0	0.5	
		Rainfed	506	354	11	352	11	363	70.0	2.2	72.1	2	0	2	99.4	100.0	99.5	0.6	0	0.5	
		Total	1,643	1,288	253	1,281	252	1,533	78.4	15.4	93.8	7	1	8	99.5	99.6	99.5	0.5	0.4	0.5	
Hambantota District	Hambantota	Major	1,981	1,972	1,276	1,971	1,273	3,244	99.5	64.4	164.0	1	3	4	99.9	99.8	99.9	0.1	0.2	0.1	
		Minor	919	561	561	529	-	529	61.0	-	61.0	32	-	32	94.3	-	94.3	5.7	-	5.7	
		Rainfed	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Total	2,900	2,533	1,276	2,500	1,273	3,773	87.3	44.0	131.3	33	3	36	98.7	99.8	99.1	1.3	0.2	0.9	
Hambantota District	Hambantota	Major	19,236	16,861	10,134	16,843	10,111	26,954	87.7	52.7	140.3	18	23	41	99.9	99.8	99.8	0.1	0.2	0.2	
		Minor	5,117	3,959	1,148	3,833	1,147	4,980	77.4	22.4	99.8	126	1	127	96.8	99.9	97.5	3.2	0.1	2.5	
		Rainfed	1,570	1,263	422	1,237	422	1,659	80.4	26.9	107.3	26	0	26	97.9	100.0	98.5	2.1	0	1.5	
		Total	25,923	22,083	11,704	21,913	11,660	33,593	85.2	45.1	130.3	170	24	194	99.2	99.8	99.4	0.8	0.2	0.6	

Source: "Sowing and Harvesting Periods of Paddy Cultivation in Sri Lanka - 1994", Department of Census and Statistics, Ministry of Finance, Planning, Ethnic Affairs and National Integration, 1995.

App. 2.2.3-11 Target Cropped Area and Production of Paddy (1995)

Scheme	D.S. Division	Type of Irrigation	Cultivated Area (ha)		Cropped Area (ha)		Harvested Area (ha)		Production (mt)		Average Yield (kg/ha)		Cropping Intensity (%)		Crop Failure Area (ha)		Harvest Rate (%)		Degree of Crop Failure (%)								
			Area (ha)	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total	Maha	Yala	Total					
Lysagatola	Ambulantota	Major	3,407	3,407	3,407	6,814	3,350	3,350	6,700	14,341	12,731	27,072	4,209	3,737	3,973	100.0	100.0	200.0	98.3	98.3	98.3	1.7	1.7	1.7			
		Minor	632	519	300	819	495	280	775	1,809	1,021	2,830	3,486	3,403	3,455	82.1	47.5	129.6	95.4	94.3	94.6	4.6	6.7	5.4			
		Rainfed																									
		Total	4,039	3,926	3,707	7,633	3,845	3,630	7,475	16,150	13,752	29,902	4,114	3,710	3,917	97.2	91.8	189.0	81	77	158	97.9	97.9	97.9	2.1	2.1	2.1
Munthawella Reservoir	Wenckeriya	Major	2,059	2,059	2,059	4,118	2,024	2,024	4,048	8,667	7,694	16,361	4,209	3,737	3,973	100.0	100.0	200.0	98.3	98.3	98.3	1.7	1.7	1.7			
		Minor	1,122	1,122	149	1,271	1,091	138	1,229	3,912	507	4,419	3,487	3,403	3,477	100.0	13.3	113.3	97.2	92.6	96.7	2.8	7.4	3.3			
		Rainfed																									
		Total	3,181	3,181	2,208	5,389	3,115	2,162	5,277	12,579	8,201	20,780	3,954	3,714	3,856	100.0	69.4	169.4	66	46	112	97.9	97.9	97.9	2.1	2.1	2.1
Okerwala	Angunulapeliya	Major	1,842	1,842	1,842	3,684	1,821	1,821	3,642	6,315	4,944	11,459	4,211	3,737	3,993	100.0	85.5	185.5	26	22	48	98.3	98.3	98.3	1.7	1.7	1.7
		Minor	403	325	325	650	316	316	632	3,336	2,123	5,459	3,497	3,402	3,459	99.3	64.9	164.2	25	17	42	97.4	97.3	97.3	2.6	2.7	2.7
		Rainfed	342	229	229	458	226	226	452	860	263	1,123	2,867	2,857	2,815	98.7	32.6	131.3	7	3	10	97.7	97.0	97.5	2.3	3.0	2.5
		Total	2,812	2,801	2,046	4,847	2,743	2,004	4,747	10,711	7,330	18,041	3,824	3,583	3,722	99.6	72.8	172.4	38	42	100	97.9	97.9	97.9	2.1	2.1	2.1
Tangalle	Belitota	Major	1,842	1,842	1,842	3,684	1,819	1,819	3,638	6,065	5,015	10,664	4,209	3,737	3,973	72.9	72.9	145.7	23	23	46	98.3	98.3	98.3	1.7	1.7	1.7
		Minor	505	505	350	855	491	338	829	1,761	1,190	2,951	3,487	3,400	3,451	100.0	69.3	169.3	14	12	26	97.2	96.6	97.0	2.8	3.4	3.0
		Rainfed	10	10		10	9	9	18	29	29	58	2,900	2,900	2,900	100.0		100.0	1		1	90.0		90.0	10.0		10.0
		Total	2,357	2,357	1,692	3,549	1,819	1,657	3,476	7,855	6,205	13,644	4,006	3,667	3,844	78.8	71.8	150.6	38	35	73	98.0	97.9	97.9	2.0	2.1	2.1
Badaginya	Hambantota	Major	1,734	1,734	1,734	3,468	1,705	1,705	3,410	7,299	5,732	13,031	4,209	3,737	3,987	100.0	88.5	188.5	29	26	55	98.3	98.3	98.3	1.7	1.7	1.7
		Minor	478	478	405	883	465	391	856	1,667	1,378	3,045	3,487	3,402	3,448	100.0	84.7	184.7	13	14	27	97.3	96.5	96.9	2.7	3.5	3.1
		Rainfed	47	30		30	26	26	52	87	87	174	2,900	2,900	2,900	63.8		63.8	4		4	86.7		86.7	13.3		13.3
		Total	2,259	2,242	1,939	4,181	2,196	1,899	4,095	9,053	7,110	16,103	4,038	3,667	3,856	99.2	85.8	185.1	46	40	86	97.9	97.9	97.9	2.1	2.1	2.1
Hambantota District	Hambantota District	Major	721	504	504	1,008	496	496	992	2,121	1,883	4,004	4,208	3,736	3,972	69.9	69.9	139.8	8	8	16	98.4	98.4	98.4	1.6	1.6	1.6
		Minor	597	597	535	1,132	581	521	1,102	2,081	1,620	3,701	3,486	3,402	3,446	100.0	89.6	189.6	16	14	30	97.3	97.4	97.3	2.7	2.6	2.7
		Rainfed	465	465	275	740	457	270	727	1,354	732	2,086	2,912	2,662	2,819	100.0	59.1	159.1	8	5	13	98.3	98.2	98.2	1.7	1.8	1.8
		Total	1,783	1,566	1,314	2,880	1,534	1,287	2,821	5,556	4,435	9,991	3,548	3,375	3,469	87.8	73.7	161.5	32	27	59	98.0	97.9	98.0	2.0	2.1	2.0
Hambantota District	Hambantota District	Major	2,059	2,059	2,059	4,118	2,024	2,024	4,048	8,667	7,694	16,361	4,209	3,737	3,973	100.0	100.0	200.0	35	35	70	98.3	98.3	98.3	1.7	1.7	1.7
		Minor	1,122	1,122	149	1,271	1,091	138	1,229	3,912	507	4,419	3,487	3,403	3,477	100.0	13.3	113.3	31	11	42	97.2	92.6	96.7	2.8	7.4	3.3
		Rainfed																									
		Total	3,181	3,181	2,208	5,389	3,115	2,162	5,277	12,579	8,201	20,780	3,954	3,714	3,856	100.0	69.4	169.4	66	46	112	97.9	97.9	97.9	2.1	2.1	2.1
Hambantota District	Hambantota District	Major	20,919	19,647	14,381	34,028	19,317	14,139	33,456	82,698	53,738	136,436	4,209	3,737	4,010	93.9	68.7	162.7	330	242	572	98.3	98.3	98.3	1.7	1.7	1.7
		Minor	5,910	5,249	2,913	8,162	5,109	2,835	7,944	18,311	9,909	28,220	3,488	3,402	3,457	88.8	49.3	138.1	140	78	218	97.3	97.3	97.3	1.7	1.7	1.7
		Rainfed	1,724	1,590	1,015	2,605	1,512	956	2,468	4,618	2,701	7,319	2,904	2,661	2,810	92.2	58.9	151.1	78	59	137	95.1	94.2	94.7	4.9	5.8	5.3
		Total	28,553	26,486	18,309	44,795	25,938	17,930	43,868	105,627	66,348	171,975	3,988	3,624	3,859	92.8	64.1	156.9	548	379	927	97.9	97.0	97.9	2.1	2.1	2.1

Source: "Agricultural Implementation Programme 1994/1995, Hambantota District".

App. 2.2.3-12 Target Cropped Area and Production of Paddy (1996)

Scheme	D.S. Division	Type of Irrigation	Cultivated Area (ha)		Cropped Area (ha)		Harvested Area (ha)		Production (mt)		Average Yield (t/ha)		Chopping Intensity (%)		Crop Failure Area (ha)		Harvest Rate (%)		Drops of Crop Failure (%)			
			Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Lyangasota	Ambalatano	Major	3,403	(86.2)	3,403	(89.0)	6,806	(86.6)	3,246	3,365	6,692	15,403	15,403	30,806	100.0	100.0	57	57	96.3	96.3	1.7	1.7
		Minor	452	(11.7)	422	(11.0)	874	(11.4)	440	411	851	1,079	1,810	3,749	100.0	93.4	12	11	97.3	97.4	2.7	2.6
		Rainfed	-	(-)	-	(-)	-	(-)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	3,855	(100.0)	3,825	(100.0)	7,680	(100.0)	3,786	3,777	7,543	17,342	17,213	34,555	100.0	96.2	69	68	96.2	96.2	1.8	1.8
Mambanwa Reservoir	Mambanwa	Major	2,059	(64.7)	2,059	(93.2)	4,118	(76.4)	2,024	2,024	4,048	9,320	9,320	18,640	100.0	100.0	35	35	96.3	96.3	1.7	1.7
		Minor	1,122	(35.3)	149	(6.7)	1,271	(23.6)	1,092	145	1,237	4,811	639	5,450	100.0	15.3	30	4	97.3	97.3	2.7	2.7
		Rainfed	-	(-)	-	(-)	-	(-)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	3,181	(100.0)	2,208	(100.0)	5,389	(100.0)	3,116	2,169	5,285	14,131	9,959	24,090	100.0	69.4	65	39	96.0	96.2	2.0	1.8
Wembaniya	Wembaniya	Major	1,547	(53.8)	1,323	(93.0)	2,670	(66.8)	1,301	1,301	2,602	7,002	5,948	12,950	100.0	85.5	246	22	84.1	96.3	90.7	15.9
		Minor	1,070	(35.3)	-	(-)	1,070	(23.9)	1,003	-	1,003	4,419	4,419	4,290	100.0	100.0	27	-	97.4	-	97.4	2.6
		Rainfed	300	(10.4)	99	(7.0)	399	(9.3)	296	94	390	1,119	369	1,488	100.0	33.0	14	5	95.3	94.9	95.2	4.7
		Total	2,877	(100.0)	1,422	(100.0)	4,299	(100.0)	2,600	1,395	3,995	12,540	6,357	18,897	100.0	49.4	287	27	90.0	96.1	92.7	10.0
Oleucia	Oleucia	Major	215	(24.7)	215	(34.1)	430	(24.7)	211	211	422	973	973	1,946	100.0	100.0	4	4	96.1	96.1	1.9	1.9
		Minor	325	(37.4)	244	(38.7)	569	(37.9)	316	237	553	1,394	1,047	2,441	100.0	75.1	9	7	97.2	97.1	97.2	2.8
		Rainfed	329	(37.9)	172	(27.2)	501	(33.4)	313	164	477	1,227	641	1,868	100.0	52.3	16	8	95.1	95.5	95.2	4.8
		Total	869	(100.0)	631	(100.0)	1,500	(100.0)	840	612	1,452	3,594	2,661	6,255	100.0	72.6	29	19	96.7	97.0	96.8	3.3
Angusotopetrea	Angusotopetrea	Major	1,448	(69.1)	1,239	(67.6)	2,477	(68.4)	1,218	1,218	2,436	6,735	5,608	12,343	100.0	83.3	270	21	81.9	96.3	89.2	16.1
		Minor	655	(30.6)	595	(32.4)	1,250	(31.3)	638	579	1,217	2,810	2,555	5,365	100.0	90.8	17	16	97.4	97.3	97.4	2.6
		Rainfed	11	(0.5)	-	(-)	11	(0.3)	10	-	10	41	-	41	100.0	100.0	1	-	98.9	-	98.9	9.1
		Total	2,114	(100.0)	1,834	(100.0)	3,738	(100.0)	1,866	1,797	3,663	9,586	8,161	17,747	100.0	85.1	288	37	86.6	98.0	91.9	17.4
Tangalle	Tangalle	Major	1,780	(77.5)	1,580	(60.2)	3,160	(63.1)	1,553	1,553	3,106	8,057	7,149	15,206	100.0	88.8	227	27	87.2	96.3	92.4	12.8
		Minor	482	(21.0)	170	(9.7)	652	(16.1)	469	165	634	2,068	729	2,797	100.0	35.3	13	5	97.3	97.1	97.2	2.7
		Rainfed	34	(1.5)	-	(-)	34	(0.8)	32	-	32	127	-	127	100.0	100.0	2	-	94.1	-	94.1	5.9
		Total	2,296	(100.0)	1,750	(100.0)	4,446	(100.0)	2,054	1,718	3,772	10,252	7,878	18,130	100.0	76.2	249	32	89.5	96.2	92.2	10.5
Belata	Belata	Major	645	(37.8)	600	(42.8)	1,245	(39.9)	590	590	1,180	2,919	2,716	5,635	100.0	93.0	55	10	91.5	96.3	94.8	8.5
		Minor	597	(35.0)	540	(38.2)	1,137	(36.4)	581	526	1,107	2,561	2,317	4,878	100.0	90.5	16	14	97.3	97.4	97.4	2.7
		Rainfed	465	(27.2)	275	(19.4)	740	(23.7)	443	262	705	1,794	1,026	2,790	100.0	59.1	22	13	95.3	95.3	95.3	4.7
		Total	1,707	(100.0)	1,415	(100.0)	3,122	(100.0)	1,614	1,378	2,992	7,214	6,059	13,271	100.0	82.9	93	37	94.6	97.4	95.8	5.4
Hambanawa	Hambanawa	Major	2,059	(64.7)	2,059	(93.2)	4,118	(76.4)	2,024	2,024	4,048	9,320	9,320	18,640	100.0	100.0	35	35	96.3	96.3	96.3	1.7
		Minor	1,122	(35.3)	149	(6.7)	1,271	(23.6)	1,092	145	1,237	4,811	639	5,450	100.0	13.3	30	4	97.3	97.3	97.3	2.7
		Rainfed	-	(-)	-	(-)	-	(-)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Total	3,181	(100.0)	2,208	(100.0)	5,389	(100.0)	3,116	2,169	5,285	14,131	9,959	24,090	100.0	69.4	65	39	96.0	96.2	96.1	2.0
Hambanawa District	Hambanawa District	Major	19,976	(74.1)	13,416	(80.4)	24,392	(76.6)	18,934	14,174	33,108	90,418	63,243	155,661	100.0	72.2	1,042	242	94.8	96.3	96.3	5.2
		Minor	5,235	(19.4)	2,367	(13.2)	7,602	(19.9)	5,065	2,304	7,369	22,456	10,154	32,610	100.0	45.2	140	63	97.3	97.3	97.3	2.7
		Rainfed	1,749	(6.3)	1,144	(6.4)	2,893	(6.5)	1,665	1,069	2,734	6,523	4,207	10,790	100.0	63.4	84	55	95.2	95.2	95.2	4.8
		Total	26,960	(100.0)	17,927	(100.0)	44,887	(100.0)	25,664	17,547	43,261	119,397	79,664	199,061	100.0	66.5	1,266	360	95.3	96.0	96.0	4.7

Source: "Agricultural Implementation Programme 1995/1996, Hambanawa District".

App. 2.2.3-13 Target Area under Different Paddy Varieties (1995 and 1996)

(Unit: %)

Scheme	D.S. Division	Year and Season	3 Months				3.5 Months					4 - 4.5 Months			
			Total	BG300	AT303	Other	Total	BG350	BW351	BG352	Other	Total	AG379-2	BG380	Other
Liyangastota	Ambalantota	1994/95 Maha	25.7	93.4	6.6	0	47.4	5.9	41.2	42.6	10.3	26.9	43.2	36.5	20.3
		1995 Yala	27.2	76.2	18.6	5.2	60.1	37.9	32.1	27.7	2.3	12.7	47.8	26.5	25.7
		Total	26.5	83.8	13.2	3.0	54.3	25.1	35.8	33.7	5.4	19.2	44.9	32.9	22.2
		1995/96 Maha	24.3	91.1	8.9	0	45.4	5.6	40.7	42.8	10.9	30.3	33.8	37.5	28.7
		1996 Yala	27.2	72.6	22.4	5.0	60.5	37.1	31.2	26.2	5.5	12.3	12.5	46.8	40.7
	Total	25.7	81.3	16.1	2.6	53.0	23.7	35.2	33.3	7.8	21.3	27.6	40.2	32.2	
	Hambantota	1994/95 Maha	15.4	89.8	8.2	2.0	49.8	55.5	27.4	9.5	7.6	34.8	36.1	49.3	14.6
		1995 Yala	26.5	99.5	0.5	0	48.7	37.2	27.9	18.6	16.3	24.8	36.6	36.6	26.8
		Total	19.9	95.1	4.0	0.9	49.4	48.1	27.6	13.2	11.1	30.7	36.3	45.1	18.6
		1995/96 Maha	15.4	89.8	8.2	2.0	49.8	55.5	27.4	9.5	7.6	34.8	36.1	49.3	14.6
1996 Yala		26.9	80.4	10.1	9.5	49.6	34.6	32.9	17.3	15.2	23.5	0	36.6	63.4	
Total	20.2	84.5	9.2	6.3	49.7	46.7	29.7	12.8	10.8	30.1	24.2	45.1	30.7		
Muruthaewela Reservoir	Weckraketiya	1994/95 Maha	13.6	73.7	26.3	0	73.2	43.9	43.0	12.2	0.9	13.2	32.4	67.6	0
		1995 Yala	37.6	45.5	16.9	37.6	59.9	61.2	32.7	6.1	0	2.5	0	100.0	0
		Total	23.7	54.8	20.0	25.2	67.6	50.4	39.1	9.9	0.6	8.7	28.4	71.6	0
		1995/96 Maha	14.5	71.2	28.8	0	72.3	43.7	42.8	12.0	1.5	13.2	34.2	65.8	0
		1996 Yala	38.5	41.7	23.8	34.5	60.5	61.6	34.9	3.5	0	1.0	0	0	100.0
	Total	22.4	54.4	26.0	19.6	68.4	49.0	40.5	9.5	1.0	9.2	32.9	63.3	3.8	
	Okewela	1994/95 Maha	32.5	80.0	0	20.0	33.8	19.2	46.2	0	34.6	33.7	100.0	0	0
		1995 Yala	41.6	71.9	0	28.1	44.9	17.4	42.0	0	40.6	13.5	100.0	0	0
		Total	37.1	75.4	0	24.6	39.3	18.2	43.8	0	38.0	23.6	100.0	0	0
		1995/96 Maha	32.6	75.0	0	25.0	34.9	16.7	46.7	0	36.6	32.5	100.0	0	0
		1996 Yala	39.6	72.0	0	28.0	42.8	18.5	40.7	0	40.8	17.6	0	100.0	0
	Total	35.6	73.6	0	26.4	38.2	17.3	43.9	0	38.6	26.2	71.5	28.5	0	
	Angunakelapessu	1994/95 Maha	22.4	74.5	4.3	21.2	77.6	62.0	33.3	0	4.7	0	0	0	0
		1995 Yala	44.0	81.3	7.0	11.7	56.0	32.3	25.8	41.9	0	0	0	0	0
		Total	34.1	79.3	6.2	14.5	65.9	48.3	29.8	21.9	0	0	0	0	0
		1995/96 Maha	25.3	75.1	8.8	16.1	74.7	56.6	32.3	0	11.1	0	0	0	0
		1996 Yala	48.9	78.1	9.2	12.7	51.1	42.6	12.7	0	44.7	0	0	0	0
	Total	36.2	72.0	9.0	14.0	63.8	51.5	25.1	0	23.4	0	0	0	0	
Tangalle	1994/95 Maha	31.2	78.6	21.4	0	59.7	28.0	-	44.8	27.2	9.1	49.0	51.0	0	
	1995 Yala	41.3	81.3	18.7	0	58.7	14.0	0	48.3	37.7	0	0	0	0	
	Total	35.9	80.0	20.0	0	59.2	21.6	0	46.4	32.0	4.9	49.0	51.0	0	
	1995/96 Maha	31.8	75.3	24.7	0	59.3	27.5	0	44.1	28.4	8.9	49.0	51.0	0	
	1996 Yala	40.0	78.6	21.4	0	60.0	13.3	0	51.0	35.7	0	0	0	0	
Total	35.4	76.9	23.1	0	59.6	21.4	0	47.1	31.5	5.0	49.0	51.0	0		
Beliana	1994/95 Maha	31.9	70.0	20.0	10.0	56.6	43.6	45.1	5.6	5.7	11.5	0	72.2	27.8	
	1995 Yala	50.5	60.2	15.1	24.7	45.7	25.0	58.3	8.3	8.4	3.8	0	0	100.0	
	Total	40.4	64.4	17.2	18.4	51.6	36.1	50.5	6.7	6.7	8.0	0	56.5	43.5	
	1995/96 Maha	34.2	65.5	25.9	8.6	55.2	41.3	45.9	6.4	6.4	10.6	0	72.2	27.8	
	1996 Yala	54.7	58.1	16.8	25.1	39.6	32.1	46.3	8.9	12.7	5.7	0	0	100.0	
Total	43.5	61.3	20.7	18.0	48.1	37.9	46.1	7.3	8.7	8.4	0	50.0	50.0		
Bafagiriya	Hambantota	1994/95 Maha	15.4	89.8	8.2	2.0	49.8	55.5	27.4	9.5	7.6	34.8	36.1	49.3	14.6
		1995 Yala	26.5	99.5	0.5	0	48.7	37.2	27.9	18.6	16.3	24.8	36.6	36.6	26.8
		Total	19.9	95.1	4.0	0.9	49.4	48.1	2.6	13.2	11.1	30.7	36.3	45.1	18.6
		1995/96 Maha	15.4	89.8	8.2	2.0	49.8	55.5	27.4	9.5	7.6	34.8	36.1	49.3	14.6
		1996 Yala	26.9	80.4	10.1	9.5	49.6	34.6	32.9	17.3	15.2	23.5	0	36.6	63.4
Total	20.2	84.5	9.2	6.3	49.7	46.7	29.7	12.8	10.8	30.1	24.2	45.1	30.7		
Hambantota District	1994/95 Maha	18.8	80.8	11.6	7.6	54.9	43.0	37.4	11.9	7.7	26.3	19.0	75.3	5.7	
	1995 Yala	36.5	74.6	12.9	12.5	56.9	35.5	28.1	13.9	22.5	6.6	44.0	30.4	25.6	
	Total	26.3	77.1	12.4	10.5	55.7	39.8	33.4	12.8	14.0	18.0	22.9	68.3	8.8	
	1995/96 Maha	19.3	78.7	13.8	7.5	54.1	41.5	37.2	12.4	8.9	26.6	18.7	72.8	8.5	
	1996 Yala	36.6	71.7	15.7	12.6	56.4	36.7	26.6	14.0	22.7	7.0	4.8	44.7	50.5	
Total	26.3	74.7	14.9	10.4	55.0	39.5	32.9	13.1	14.5	18.7	16.6	68.6	14.8		

Source: "Agricultural Implementation Programme - Hambantota District", 1994/1995 and 1995/1996.

App. 2.2.3-14 Sowing and Harvesting Periods of Paddy Cultivation (1994)

Scheme	D.S. Division	Maha Season		Yala Season	
		Sowing Period	Harvesting Period	Sowing Period	Harvesting Period
Liyangastota	Ambalantota	Sep. 2nd Week-Nov. 4th Week	Jan. 2nd Week-Apr. 4th Week	Mar. 3rd Week-Jun. 2nd Week	Jul. 2nd Week-Oct. 1st Week
	Hambantota	Sep. 2nd Week-Nov. 3rd Week	Jan. 2nd Week-Mar. 2nd Week	Mar. 2nd Week-Apr. 4th Week	Jul. 1st Week-Sep. 2nd Week
Muruthawela Reservoir	Weerakotiya	Sep. 2nd Week-Nov. 2nd Week	Jan. 1st Week-Apr. 2nd Week	Mar. 1st Week-Jun. 1st Week	Jul. 1st Week-Oct. 4th Week
	Okewela	Sep. 2nd Week-Nov. 2nd Week	Jan. 1st Week-Apr. 2nd Week	Mar. 1st Week-Jun. 1st Week	Jul. 1st Week-Oct. 4th Week
	Angunakolapelessa	Sep. 4th Week-Nov. 4th Week	Jan. 4th Week-Apr. 4th Week	Mar. 1st Week-Jun. 1st Week	Jul. 1st Week-Oct. 4th Week
	Tangalle	Sep. 2nd Week-Nov. 4th Week	Jan. 4th Week-Apr. 4th Week	Mar. 3rd Week-Jun. 2nd Week	Jul. 2nd Week-Oct. 2nd Week
Badagiriya	Beliatta	Sep. 2nd Week-Nov. 2nd Week	Jan. 2nd Week-Mar. 1st Week	Mar. 2nd Week-Apr. 4th Week	Jul. 1st Week-Sep. 1st Week
	Hambantota	Sep. 2nd Week-Nov. 3rd Week	Jan. 2nd Week-Mar. 2nd Week	Mar. 2nd Week-Apr. 4th Week	Jul. 1st Week-Sep. 2nd Week
Hambantota District		Sep. 2nd Week-Feb. 3rd Week	Jan. 1st Week-Jun. 2nd Week	Mar. 1st Week-Sep. 2nd Week	Jul. 1st Week-Dec. 3rd Week

Source: "Sowing and Harvesting Periods of Paddy Cultivation in Sri Lanka-1994", Department of Census and Statistics, Ministry of Finance, Planning, Ethnic Affairs and National Integration, 1995.

App. 2.2.3-15 Target Seed Transplanting Area (1995)

Scheme	D.S. Division	Season	Cropped Area (ha)	Transplanting Area (ha)	Transplantation Rate (%)
Liyangastota	Ambalantota	Maha	3,926	437	11.1
		Yala	3,707	252	6.8
		Total	7,633	689	9.0
	Hambantota	Maha	3,181	400	12.6
		Yala	2,208	230	10.4
		Total	5,389	630	11.7
Muruthawela Reservoir	Weekraketiya	Maha	2,801	0	0
		Yala	2,046	0	0
		Total	4,847	0	0
	Okewela	Maha	769	123	16.0
		Yala	769	82	10.7
		Total	1,538	205	13.3
	Angunakolapelessa	Maha	1,857	225	16.0
		Yala	1,692	120	7.1
		Total	3,549	345	9.7
	Tangalle	Maha	2,242	130	5.8
		Yala	1,939	35	1.8
		Total	4,181	165	3.9
Beliatta	Maha	1,566	10	0.6	
	Yala	1,314	10	0.8	
	Total	2,880	20	0.7	
Badagiriya	Hambantota	Maha	3,181	400	12.6
		Yala	2,208	230	10.4
		Total	5,389	630	11.7
Hambantota District		Maha	26,486	2,833	10.7
		Yala	18,309	1,625	8.9
		Total	44,795	4,458	10.0

Source: "Agricultural Implementation Programme 1994/1995 - Hambantota District".

App. 2.2.3-16 Cropped Area and Production of Subsidiary Food Crops (1996)

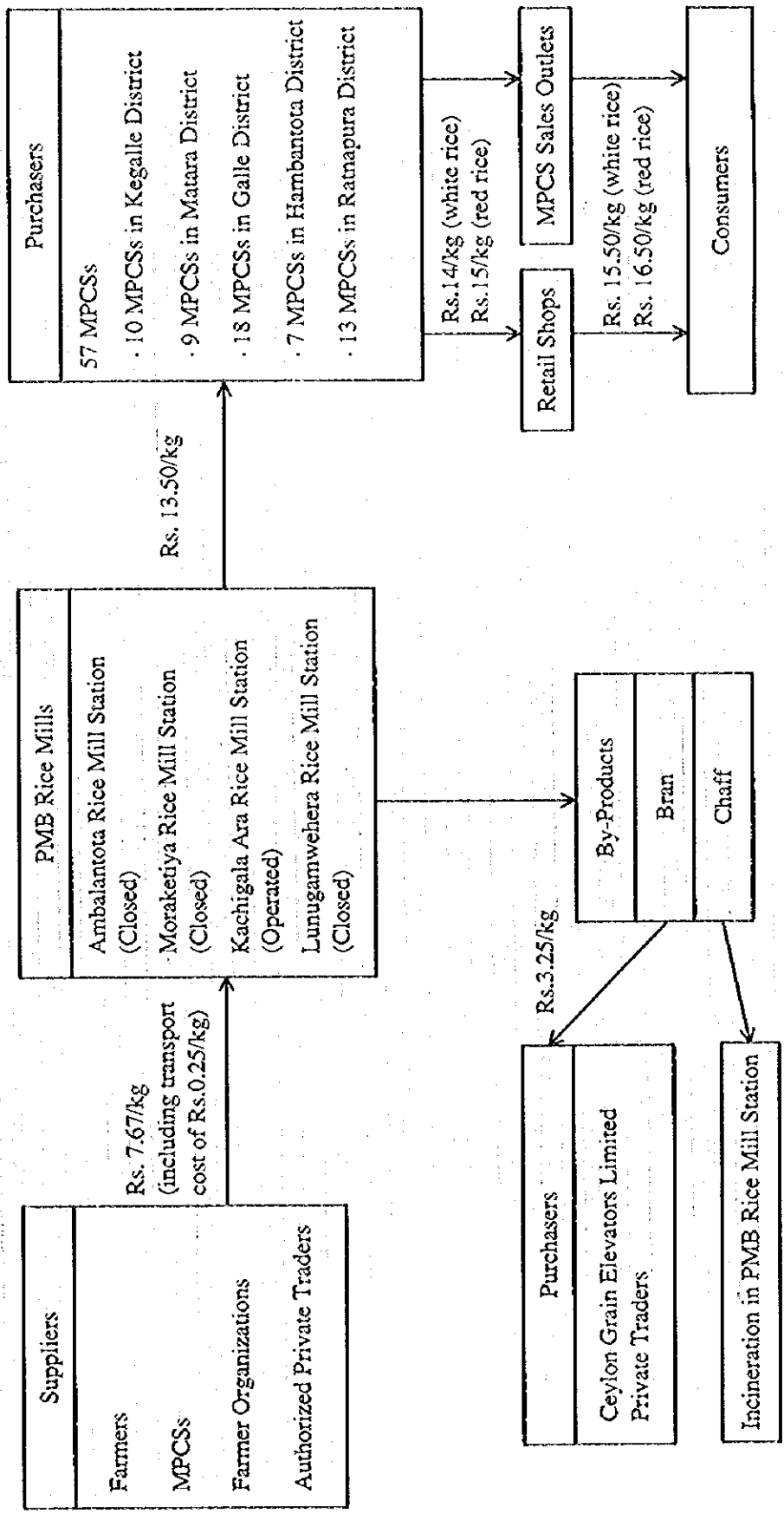
Scheme	D.S. Division	Season	Green Gram			Cowpea			Maize			Karakkan		
			Cropped Area (ha)	Production (mt)	Average Yield (kg/ha)	Cropped Area (ha)	Production (mt)	Average Yield (kg/ha)	Cropped Area (ha)	Production (mt)	Average Yield (kg/ha)	Cropped Area (ha)	Production (mt)	Average Yield (kg/ha)
Liyangastota	Ambalantota	Maha	140	133.5	954	72	66	917	21	19	905	14	6.3	450
		Yala	8	6.5	813	0	0	0	0	0	0	0	0	0
		Total	148	140	946	72	66	917	21	19	905	14	6.3	450
Muruthawela Reservoir	Hambantota	Maha	875	775	886	500	480	960	76	278	3,658	100	180	1,800
		Yala	20	18	900	20	14	700	0	0	0	0	0	0
		Total	895	793	886	520	494	950	76	278	3,658	100	180	1,800
Muruthawela Reservoir	Weekrakeriya	Maha	290	260	897	62	40	645	82	130	1,585	30	50	1,667
		Yala	120	116	967	30	20	667	0	0	0	0	0	0
		Total	410	376	917	92	60	652	82	130	1,585	30	50	1,667
Oluwela		Maha	0	0	0	4	4	1,000	14	56	4,000	30	60	2,000
		Yala	2	1.8	900	6	6	1,000	8	32	4,000	5	10	2,000
		Total	2	1.8	900	10	10	1,000	22	88	4,000	35	70	2,000
Angunakolapetenna	Tangalle	Maha	700	366	523	170	160	941	140	150	1,071	167	110	659
		Yala	130	95	731	115	90	783	0	0	0	0	0	0
		Total	830	461	555	285	250	877	140	150	1,071	167	110	659
Beliatota		Maha	238	232	899	180	273	1,517	60	123	2,050	27	46.2	1,711
		Yala	34	30.5	897	42	61.5	1,035	0	0	0	0	0	0
		Total	292	262.5	899	222	334.5	1,507	60	123	2,050	27	46.2	1,711
Badagiriya	Hambantota	Maha	17	14	824	5	3	600	11	16	1,455	11	12	1,091
		Yala	0	0	0	0	0	0	0	0	0	0	0	0
		Total	17	14	824	5	3	600	11	16	1,455	11	12	1,091
Hambantota District	Hambantota	Maha	875	775	886	500	480	960	76	278	3,658	100	180	1,800
		Yala	20	18	900	20	14	700	0	0	0	0	0	0
		Total	895	793	886	520	494	950	76	278	3,658	100	180	1,800
Hambantota District		Maha	4,857	5,833.5	1,201	1,877	1,977.3	1,053	900	1,369.8	1,522	538	640.4	1,190
		Yala	811	612.8	756	684	303.5	443	42	67.0	1,595	11	19	1,727
		Total	5,668	6,446.3	1,137	2,561	2,280.8	891	942	1,436.8	1,525	549	659.4	1,197

Source: "Agricultural Implementation Programme 1994/1995 - Hambantota District".

App. 2.2.3-17 Target Cropped Area of Vegetables (1996)

Scheme	D.S. Division	Season	Total Cropped Area (ha) (%)	Lima Beans (ha) (%)	Okura (ha) (%)	Bitter Gourd (ha) (%)	Cucumber (ha) (%)	Pumpkin (ha) (%)	Brinjal (ha) (%)	Other (%)
Liyangastota	Ambalantota	Maha	217.5 100.0	9.0 4.1	105.0 48.3	3.0 1.4	5.0 2.3	65.0 29.9	4.0 1.8	12.2
		Yala	194.0 100.0	0 0	0 0	25.0 12.9	30.0 15.5	58.0 29.9	4.0 2.1	39.6
		Total	411.5 100.0	9.0 2.2	105.0 25.5	28.0 6.8	35.0 8.5	123.0 29.9	8.0 1.9	25.2
Hambantota	Hambantota	Maha	260.0 100.0	38.0 14.6	25.0 9.6	30.0 11.5	56.0 21.5	30.0 11.5	14.0 5.4	25.9
		Yala	127.0 100.0	0 0	0 0	18.0 13.1	24.0 17.5	43.0 31.4	0 0	38.0
		Total	387.0 100.0	38.0 9.6	25.0 6.3	48.0 12.1	80.0 20.2	73.0 18.4	14.0 3.5	29.9
Muruthawela Reservoir	Weckraketiya	Maha	69.0 100.0	8.0 11.6	16.0 23.2	5.0 7.2	5.0 7.2	4.0 5.8	6.0 8.7	36.3
		Yala	141.5 100.0	0 0	0 0	27.0 19.1	18.0 12.7	60.0 42.4	0 0	25.8
		Total	210.5 100.0	8.0 3.8	16.0 7.6	32.0 15.2	23.0 10.9	64.0 30.4	6.0 2.9	29.2
Okewela	Okewela	Maha	81.5 100.0	5.0 6.1	20.0 24.5	6.0 7.4	5.0 6.1	1.0 1.2	6.0 7.4	47.3
		Yala	69.0 100.0	0 0	0 0	10.0 14.5	15.0 21.7	10.0 14.5	0 0	49.3
		Total	150.5 100.0	5.0 3.3	20.0 13.3	16.0 10.6	20.0 13.3	11.0 7.3	6.0 4.0	48.2
Angunakolapelessa	Angunakolapelessa	Maha	637.0 100.0	96.0 15.1	65.0 10.2	55.0 8.6	35.0 5.5	120.0 18.8	105.0 16.5	25.3
		Yala	177.8 100.0	0 0	0 0	40.0 22.5	23.0 12.9	40.0 22.5	0 0	42.1
		Total	814.8 100.0	96.0 11.8	65.0 8.0	95.0 11.7	58.0 7.2	160.0 19.6	105.0 12.9	28.8
Tangalle	Tangalle	Maha	614.5 100.0	37.0 6.0	46.0 7.5	116.0 18.9	30.0 4.9	120.0 19.5	80.0 13.0	30.2
		Yala	195.8 100.0	0 0	0 0	40.0 20.4	23.0 11.7	58.0 29.6	0 0	38.3
		Total	810.3 100.0	37.0 4.6	46.0 5.7	156.0 19.3	53.0 6.5	178.0 22.0	80.0 9.9	32.0
Beliatta	Beliatta	Maha	163.5 100.0	9.0 5.5	105.0 64.2	3.0 1.8	5.0 3.1	5.0 3.1	4.0 2.4	19.9
		Yala	153.0 100.0	0 0	0 0	27.0 17.6	18.0 11.8	40.0 26.1	0 0	44.5
		Total	316.5 100.0	9.0 2.8	105.0 33.2	30.0 9.5	23.0 7.3	45.0 14.2	4.0 1.3	31.7
Badagriya	Hambantota	Maha	260.0 100.0	38.0 14.6	25.0 9.6	30.0 11.5	56.0 21.5	30.0 11.5	14.0 5.4	25.9
		Yala	137.0 100.0	0 0	0 0	18.0 13.1	24.0 17.5	43.0 31.4	0 0	38.0
		Total	397.0 100.0	38.0 9.6	25.0 6.3	48.0 12.1	80.0 20.2	73.0 18.4	14.0 3.5	29.9
Hambantota District	Hambantota District	Maha	2808.0 100.0	374.0 13.3	479.0 17.1	257.0 9.2	156.0 5.6	423.0 15.1	316.0 11.3	28.4
		Yala	1645.6 100.0	0 0	0 0	295.0 17.9	218.0 13.2	444.0 27.0	4.0 0.2	41.7
		Total	4453.6 100.0	374.0 8.4	479.0 10.8	552.0 12.4	374.0 8.4	867.0 19.5	320.0 7.2	33.3

Source: "Agricultural Implementation Programme 1995/1996 - Hambantota District".



Source: Paddy Marketing Board in Hambantota District.

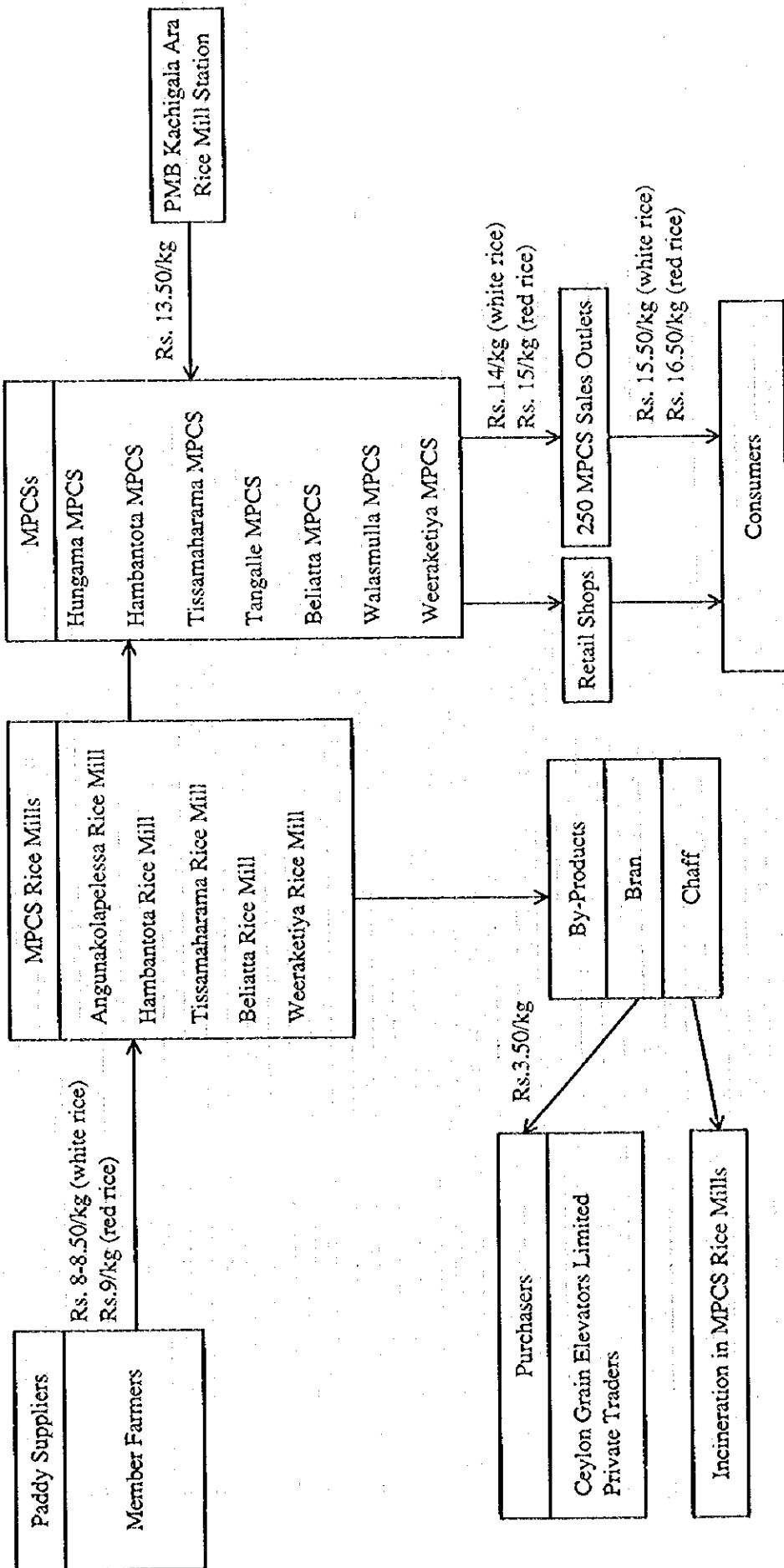
App. 2.2.3-18 Channels of Paddy and Rice Distribution by Paddy Marketing Board in Hambantota

App. 2.2.3-19 Purchase and Sales Volume of Paddy/Rice by Paddy Marketing Board

Month	Paddy Purchasing (kg)		Rice Production (kg)				Rice Sales		
	1994	1995	1995		1996		1995		1996
			Paddy	Rice	Paddy	Rice	kg	Rs.	kg
Jan	-	-	-	-	445,060	284,839	1,685,530	20,226,360	1,768,668
Feb	-	-	-	-	202,896	131,335	2,830,217	33,962,694	402,623
Mar	14,577	1,817,233	-	-			851,397	10,216,764	
Apr	24,513	1,777,279	5,400	1,700			310,779	3,729,348	
May	57,028	1,073,537	63,000	28,828			1,019,236	12,230,832	
Jun	11,400	44,465	45,989	29,433			804,310	9,381,720	
Jul	-	-	362,180	231,796			226,440	2,715,360	
Aug	-	49,078	516,652	330,709			483,020	4,903,850	
Sep	579,936	2,525,320	364,566	271,726			1,542,460	15,445,750	
Oct	892,360	698,368	252,780	161,779			2,149,120	23,502,675	
			(234,380)	(145,600)					
Nov	-	923	322,090	231,733			4,092,403	46,568,265	
			(112,744)	(168,715)					
Dec	-	-	494,282	316,339			1,571,115	18,928,021	
Total	1,579,814	7,986,203	2,426,939	1,604,043			17,566,027	201,811,639	
			(347,124)	(314,315)					

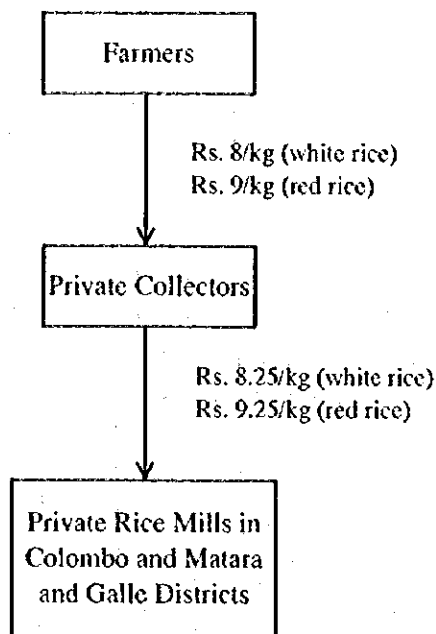
Note: Figures in parenthesis indicate re-polishing of old rice.

Source: Paddy Marketing Board in Hambantota district.



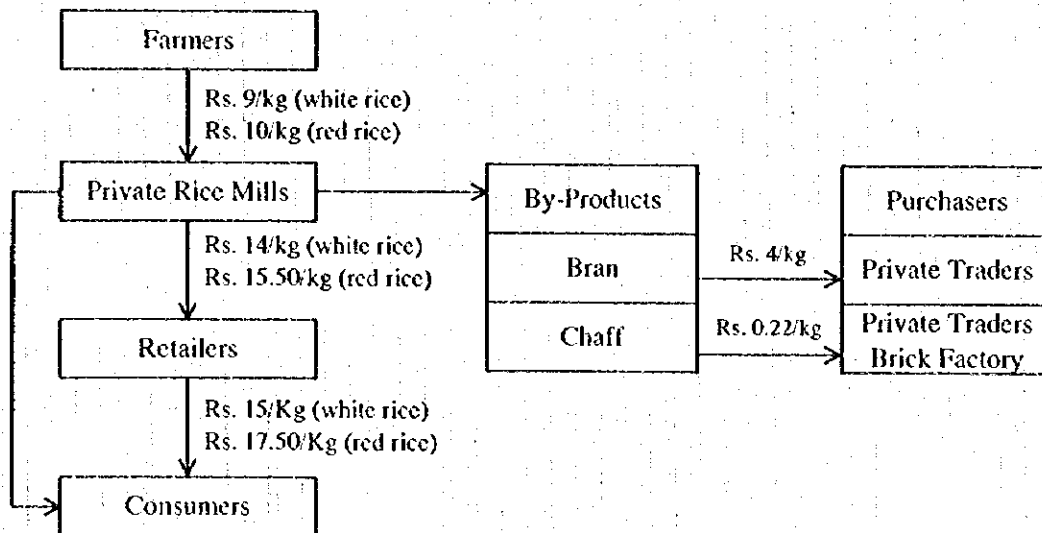
Source: Each MPCS in Hambantota district.

App. 2.2.3-20 Channels of Paddy and Rice Distribution by Multi-purpose Co-operative Societies in Hambantota District



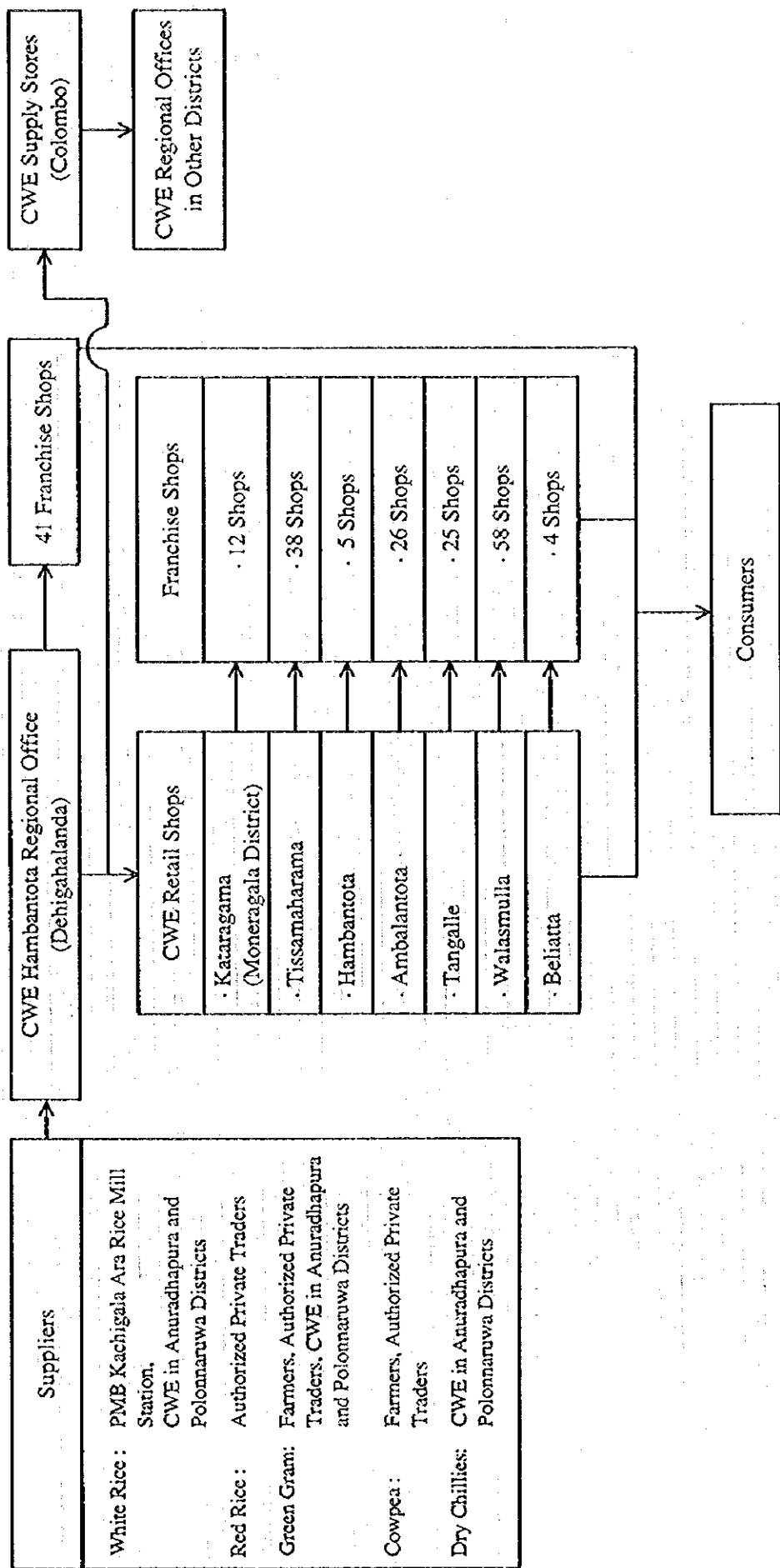
Note: Transport cost is borne by private rice millers.
Source: Private Collectors in Hambantota district.

App. 2.2.3-21 Channels of Paddy and Rice Distribution by Private



Source: Private rice millers in Hambantota district.

App. 2.2.3-22 Channels of Paddy and Rice Distribution by Private Rice



Source: CWE Hambantota Regional Office.

App. 2.2.3-24 Distribution Channels of Rice and Subsidiary Food Crops by Co-operative Wholesale Establishment in Hambantota District

App. 2.2.3-27 Agrarian Services Centres in Hambantota District

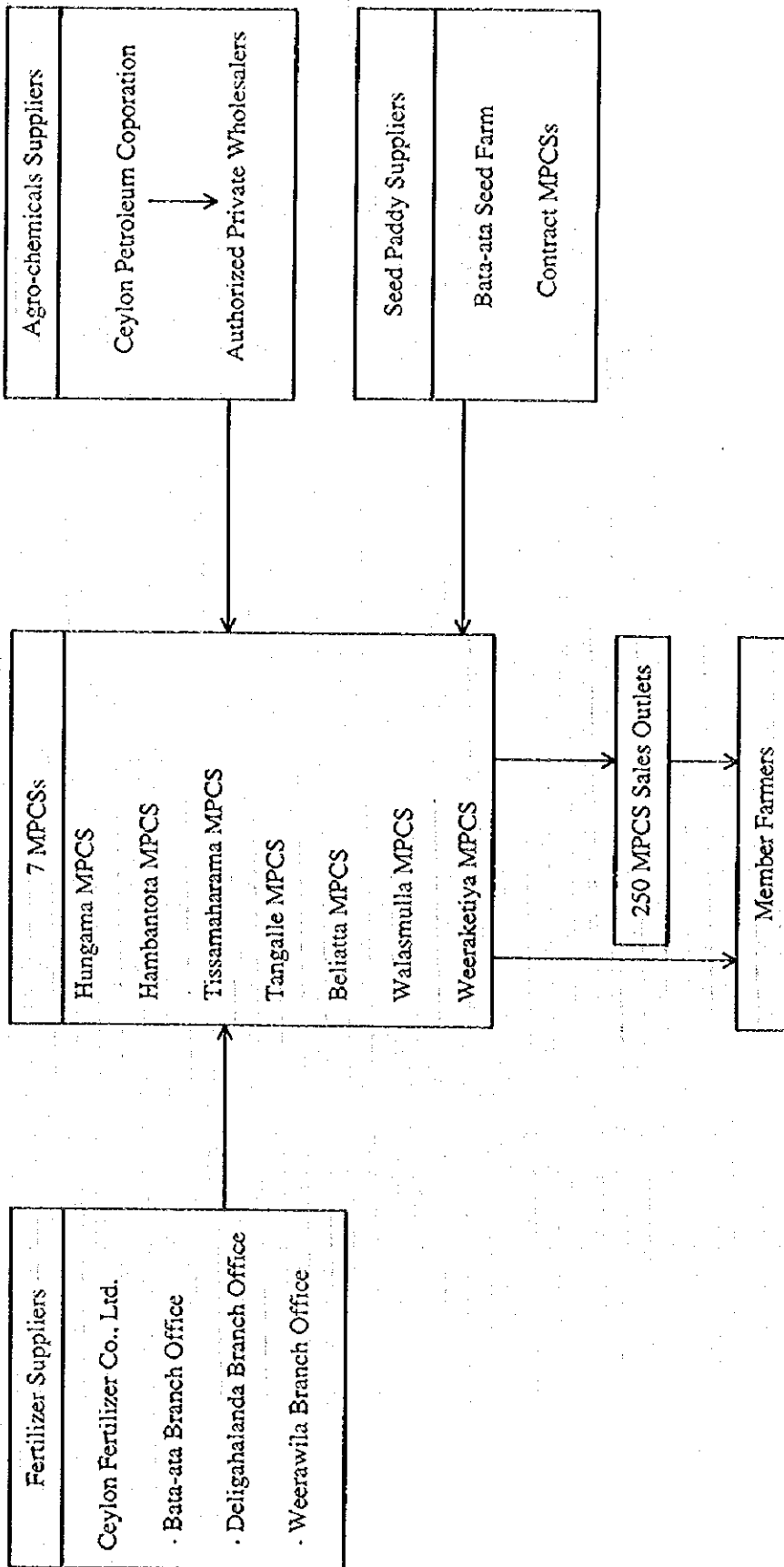
ASC	D.S. Division	G.N.D. Division (No.)	4-wheel Traders		Storage Facilities		Sales of Seeds Paddy (1995)		Sales of Fertilizers (1995)				Sales Value of Agro-chemicals (Rs)	
			Owned (No.)	No. Capacity	Value (Rs)	Estimated Volume (mt)	Urea (mt)	V-Mixture (mt)	TDM (mt)	MOP (mt)	Total (mt)			
Yodhakandiya	Tissamaharama	28	4	1	40	0	0	4.45	0	0	0	0	4.45	48,621
Beralihela	Lunugamwehera	8	2	1	40	0	0	4.23	0.85	3.60	1.36	0	10.04	0
Weerawila	Lunugamwehera	38	4	1	40	0	0	17.85	4.55	6.65	0	0	29.05	37,852
Badagiriya	Hambantota	18	4	1	40	109,740	8.8	10.75	1.45	6.58	1.15	0	19.93	12,778
Meegaha Jandura	Sooriyawewa	26	0	1	40	54,640	4.4	10.84	0.75	5.76	0	0	17.35	42,166
Ambalantota	Ambalantota	33	2	1	40	8,987	0.7	0.45	0.43	1.53	0	0	2.41	8,589
Lunama	Ambalantota	38	0	1	40	39,446	3.2	5.10	3.03	2.60	0.38	0	11.11	14,752
Angunakolapelessa	Angunakolapelessa	37	0	1	40	8,400	0.7	1.10	1.05	2.40	0	0	4.55	9,020
Meegas Ara	Weeraketiya	43	0	0	-	0	0	0	0	0	0	0	0.00	177
Walasmulla	Weeraketiya	36	3	1	40	214,605	17.2	27.11	24.55	32.63	0	0	84.29	99,265
Katuwana	Katuwana	48	2	1	40	45,640	3.7	19.90	16.60	16.47	0	0	52.97	185,505
Modarawana	Okewela	35	1	1	40	33,400	2.7	2.85	4.00	2.00	0	0	8.85	17,162
Udayala	Angunakolapelessa	14	0	1	40	31,320	2.5	6.80	9.75	2.85	0.05	0	19.45	6,953
Netolpitiya	Tangalle	45	1	1	40	119,140	9.6	7.90	5.60	4.05	0	0	17.55	62,538
Beliatta	Baliatta	80	2	1	40	87,300	7.0	0.15	0	0	0.18	0	0.33	0
Weeraketiya	Weeraketiya	49	0	1	40	187,500	15.1	6.42	7.38	3.90	1.03	0	18.73	48,621
Total		576	25	15	600	940,118	75.6	125.90	79.99	91.02	4.15	0	301.06	593,999

Source: Department of Agrarian Services in Hambantota district.

App. 2.2.3-28 Multi-purpose Co-operative Societies in Hambantota District

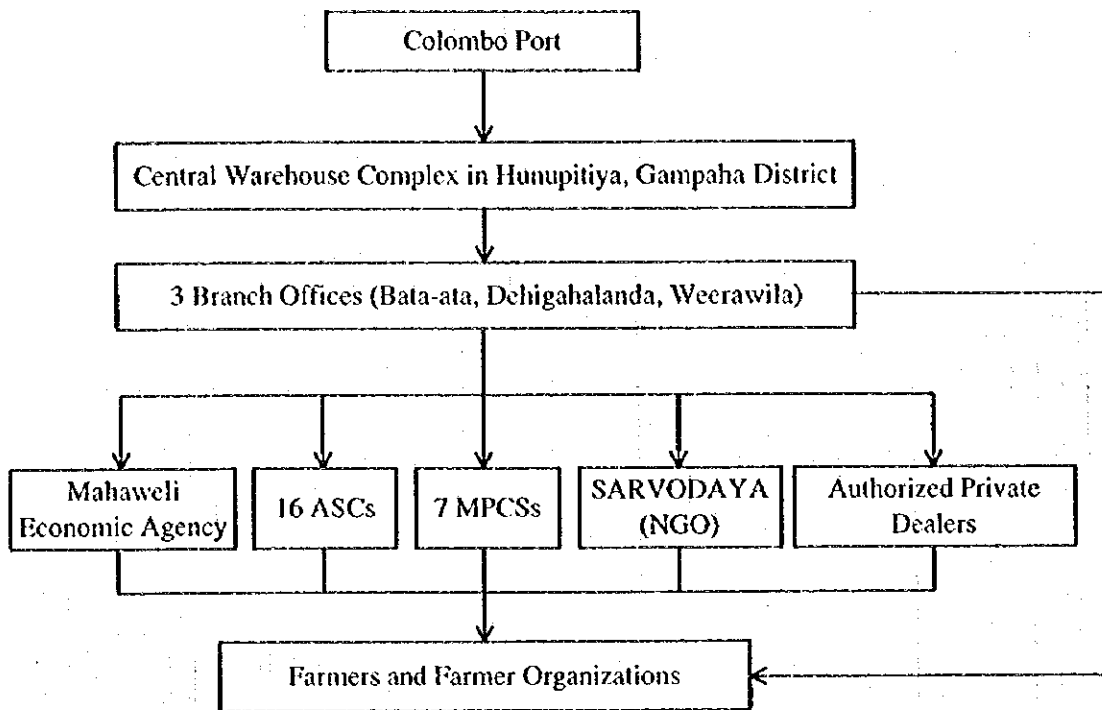
MPCS	D.A. Division	No. of Members	No. of Sales Outlets	Rice Mill Facilities		Storage Facilities		Co-operative Rural bank		Sales of Seed Paddy (1995)		Sales of Fertilizer (1995)				Sales of Agro-chemicals (1995)					
				No.	Location	No.	Total Capacity (t)	No.	Location	Registered (mt)	Certified (mt)	Total (mt)	Urea (mt)	Mixture (mt)	TDM (mt)	Total (mt)	Monocrotophos (t)	Ceyphos (t)	3-4DPA (t)	MPCA (t)	Total (t)
Tissamaharama	Tissamaharama	13,900	26	1	Tissamaharama	1	10	4	Debarawewa, Jupalilama, Magama, Ranaketiya	-	87	87	150	50	50	250	80	40	490	230	840
Hambantota	Hambantota	24,800	56	1	Hambantota	6	60	6	Hambantota, Badagiriya, Panmaganuwa, Sooriyawewa, Ambalantota, Beragama Colony	N.A.	N.A.	165	90	30	50	170	120	80	490	100	790
Hungama	Ambalantota	7,900	42	1	Angunakolapelessa	5	105	8	Hanganwagura, Hungama, Behiratawawela, Barawakumbuka, Uswewa, Debokkawa, Wakamulla, Angunakolapelessa	37	27	64	65	10	52	127	140	40	668	96	944
Weeraketiya	Weeraketiya	20,000	40	1	Weeraketiya	2	20	4	Weeraketiya, Kattuwana, Middeniya, Okewela	-	-	-	50	30	20	100	-	-	-	-	-
Walasmulla	Weeraketiya	8,000	26	1	Walasmulla	1	800	4	Walasmulla, Kirama, Karamatiya, Warapiya	-	-	-	30	20	30	80	-	-	-	-	-
Tangalle	Tangalle	8,300	22	1	Netolpitiya, Ranna, Tangalle, Unakuruwa	1	120	4	Netolpitiya, Ranna, Tangalle, Unakuruwa	-	-	-	80	20	40	140	40	80	40	-	160
Beliatla	Beliatla	22,000	37	1	Beliatla	2	800	8	Beliatla, Nihiluwa, Cetumanna, Beligalla, Thonagama, Modagoda, Diyaela, Kucacheela	-	-	-	40	50	30	120	-	-	-	-	-
Hambantota District		104,900	250	5		18	1,915	38		37	114	316	505	210	272	987	380	240	1,688	426	2,734

Source: Each MPCS.



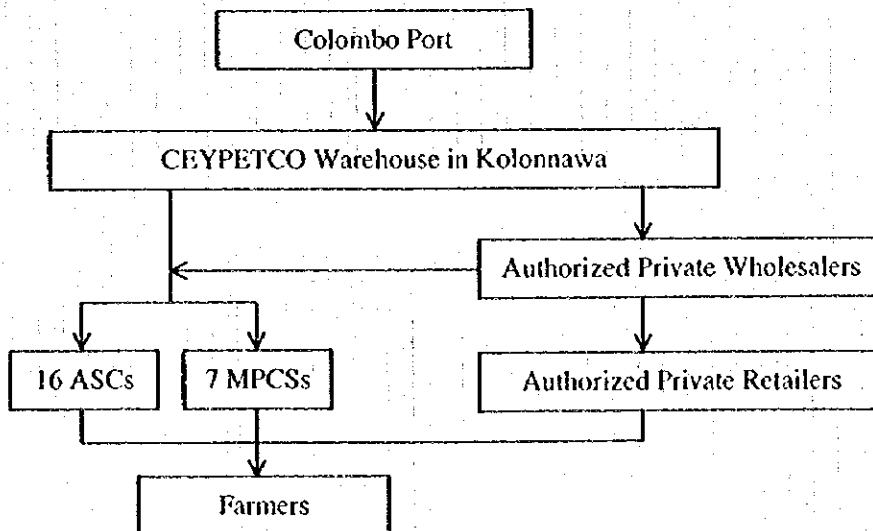
Note: No seeds paddy supply from Tangalle, Beliatta, Walasmulla and Weeraketiya MPCSSs.
 Source: Each MPCSS in Hambantota district.

App.2.2.3-29 Distribution Channels of Agricultural Inputs by Multi-purpose Co-operative Societies in Hambantota District



Source: Ceylon Fertilizer Co., Ltd.

App.2.2.3-30 Channels of Fertilizer Distribution by Ceylon Fertilizer Co., Ltd. in Hambantota District



Source: Ceylon Petroleum Corporation.

App.2.2.3-31 Channels of Agro-chemicals Distribution by Ceylon Petroleum Corporation (CEYPETCO) in Hambantota District

App. 2.2.3-32 Ceylon Fertilizer Co., Ltd. in Hambantota District

Location of Branch Offices	D.A. Division	Storage Facilities		Fertilizer Sales Volume in 1995 (mt)						
		No.	Capacity (t)	Urea	TSP	MOP	V-Mixture	TDM	Total	
Bata-ata	Tangalle	1	1,000	2,865	153	248	5,399	1,833	10,496 (84.8)	
Dihigahalanda	Hambantota	1	1,000	255	10	10	109	153	535 (4.3)	
Weerawila	Tissamaharama	1	1,000	711	12	10	200	420	1,353 (10.9)	
Total		3	3,000	3,827 (30.9)	175 (1.4)	268 (2.2)	5,708 (46.1)	2,406 (19.4)	12,384 (100.0)	

Source: Each branch Office of Ceylon Fertilizer Co., Ltd. in Hambantota District.

App.2.2.3-33 Fertilizer Discount Rates (1995-96)

(Unit: Rs./mt)

Purchasers	CFCL Bata-ata Branch Office	CFCL Dehigahalanda Branch Office	CFCL Weerawila Branch Office
Agrarian Services Centres	750	610	750
Multi-purpose Co-operative Societies	750	610	750
Authorized Private Dealers	750	710	750
Farmer Organizations	750	710	750
Farmers	500	500	500
SARVODAYA	750	710	750
Mahaweli Economic Agency	750	-	-

Source: Each branch office of Ceylon Fertilizer Co., Ltd. in Hambantota district.

App. 2.2.3-34 Target Fertilizer Requirement (1996)

(Unit: mt)

Scheme	D.S. Division	Season	Urea	V-Mixture	TDM	Other	Total
Liyangastota	Ambalantota	Maha	500	633	428	23	1,584
		Yala	491	585	452	20	1,548
		Total	991 (31.6)	1,218 (38.9)	880 (28.1)	43 (1.4)	3,132 (100.0)
	Hambantota	Maha	280	410	425	21	1,136
		Yala	274	309	262	14	859
		Total	554 (27.8)	719 (36.0)	687 (34.4)	35 (1.8)	1,995 (100.0)
Muruthawela Reservoir	Weekraketiya	Maha	280	0	0	142	422
		Yala	265	0	0	127	392
		Total	545 (67.0)	0 (0)	0 (0)	269 (33.0)	814 (100.0)
	Okewela	Maha	30	130	35	28	223
		Yala	60	64	25	19	168
		Total	90 (23.0)	194 (49.6)	60 (15.4)	47 (12.0)	391 (100.0)
	Angunakotapelessa	Maha	120	190	143	43	496
		Yala	119	194	132	31	476
		Total	239 (24.6)	384 (39.5)	275 (28.3)	74 (7.6)	972 (100.0)
	Tangalle	Maha	248	380	208	27	863
		Yala	242	245	252	23	762
		Total	490 (30.1)	625 (38.5)	460 (28.3)	50 (3.1)	1,625 (100.0)
Beliatta	Maha	140	190	146	31	507	
	Yala	123	131	153	30	437	
	Total	263 (27.8)	321 (34.0)	299 (31.7)	61 (6.5)	944 (100.0)	
Badagiriya	Hambantota	Maha	280	410	425	21	1,136
		Yala	274	309	262	14	859
		Total	554 (27.8)	719 (36.0)	687 (34.4)	35 (1.8)	1,995 (100.0)
Hambantota District		Maha	2,302	2,918	2,051	563	7,834
		Yala	2,016	2,401	1,760	402	6,579
		Total	4,318 (30.0)	5,319 (36.9)	3,811 (26.4)	965 (6.7)	14,413 (100.0)

Note: Figures in parenthesis indicate comparison with total as 100.

Source: "Agricultural Implementation Programme 1995/1996 - Hambantota District".

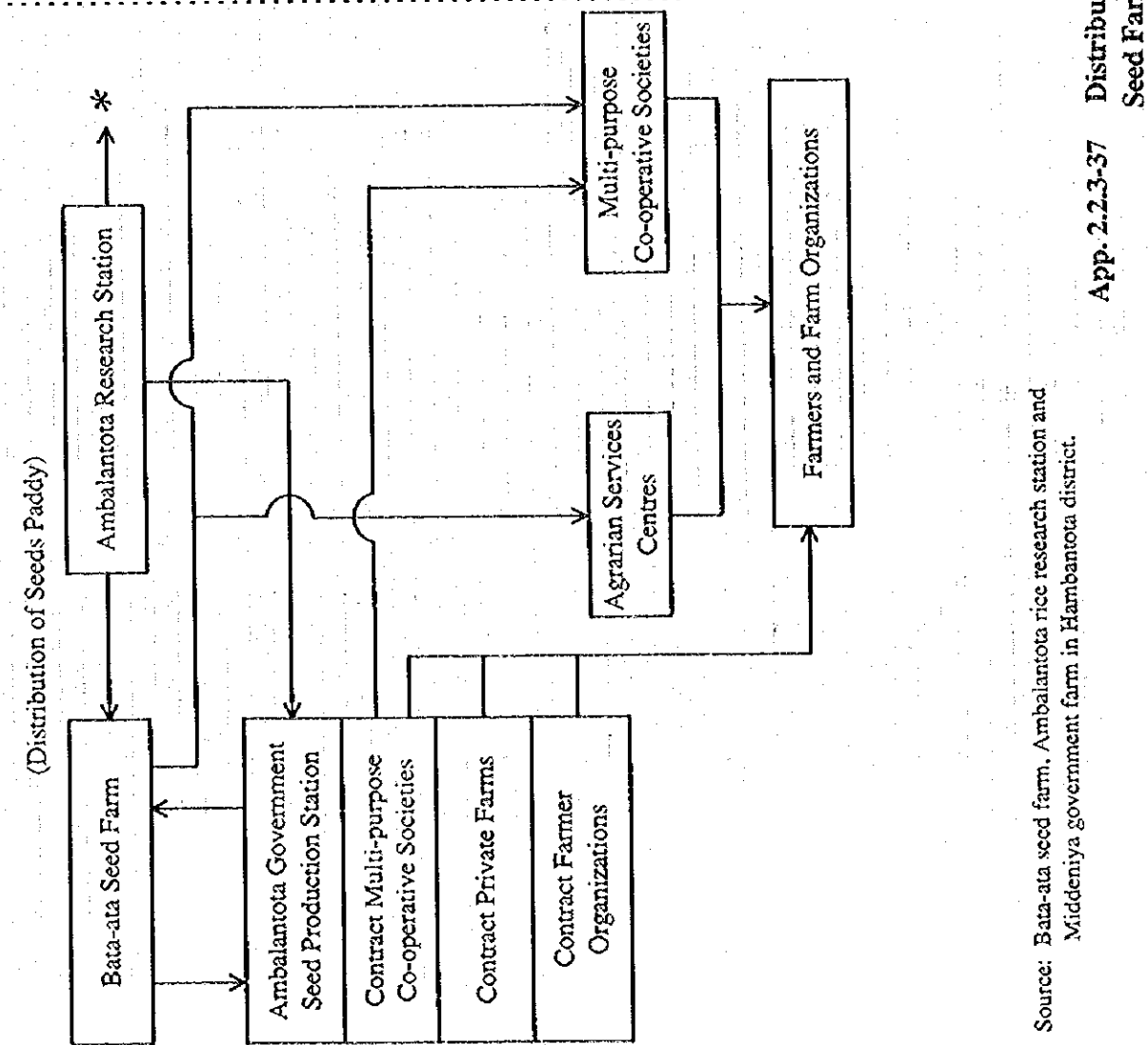
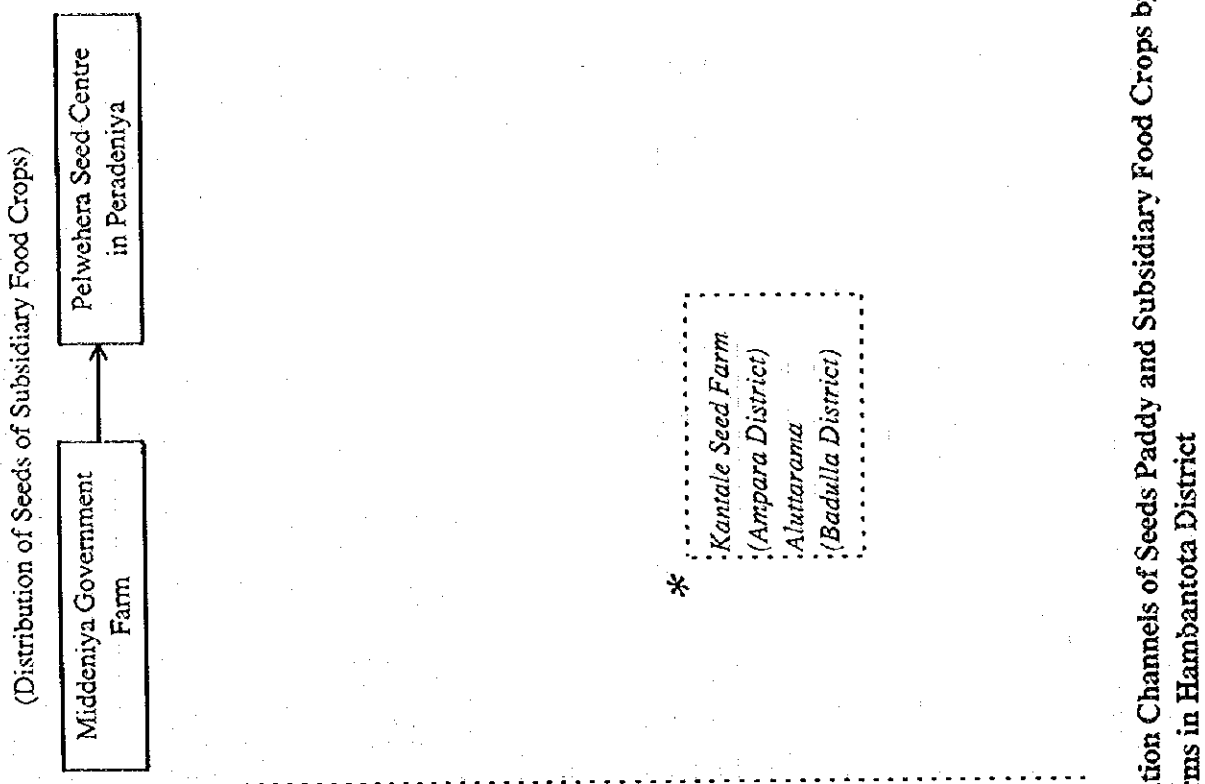
App. 2.2.3-35 Wholesale Prices of Fertilizers (1995-96)

Prices	Urea	TSP	MOP	V-Mixture	TDM	NPK
Ex-Colombo Price (Rs./mt)	9,600	10,800	10,000	10,820	10,040	12,500
<u>CFCL¹⁾ Bata-ata Branch Office</u>						
Transport and Handling Cost (Rs./mt)	350	350	350	350	350	350
Delivery Price (Rs./mt)	9,950	11,150	10,350	11,170	10,390	12,850
Discount Rate ²⁾ (Rs./mt)	750	750	750	750	750	750
Sales Price (Rs./kg)	9.20	10.40	9.60	10.42	9.64	12.10
<u>CFCL Dehigahalanda Branch Office</u>						
Transport and Handling Cost (Rs./mt)	380	380	380	380	380	380
Delivery Price (Rs./mt)	9,980	11,180	10,380	11,200	10,420	12,880
Discount Rate (Rs./mt)	610	610	610	610	610	610
Sales Price (Rs./kg)	9.37	10.57	9.77	10.59	9.81	12.27
<u>CFCL Weerawila Branch Office</u>						
Transport and Handling Cost (Rs./mt)	410	410	410	410	410	410
Delivery Price (Rs./mt)	10,010	11,210	10,410	11,230	10,450	12,910
Discount Rate (Rs./mt)	750	750	750	750	750	750
Sales Price (Rs./kg)	9.26	10.46	9.66	10.48	9.70	12.16

Note: ¹⁾ CFCL stands for Ceylon Fertilizer Co., Ltd.

²⁾ It is applied for Agrarian Services Centres and Multi-purpose Co-operative Societies.

Source: Each branch office of Ceylon Fertilizer Co., Ltd. in Hambantota district.



*
 Kantale Seed Farm
 (Ampara District)
 Aluttarama
 (Badulla District)

Source: Bata-ata seed farm, Ambalantota rice research station and Middeniya government farm in Hambantota district.

App. 2.2.3-37 Distribution Channels of Seeds Paddy and Subsidiary Food Crops by Seed Farms in Hambantota District

App. 2.2.3-38 Seed Paddy Production in 1995/96 Maha (Bata-ata Seed Farm)

Organization	Varieties (ha)	Cropped Area (ac)	Target Production (bushel)
1. Bata-ata Seed Farm	BG 350	50.0	2,000
	AT 353	23.0	2,500
Sub-total		73.0	4,500
2. Contract Farms			
Lunama	BG 300	5.0	1,500
Weerawila	AT 353	12.5	
Badaginiya	BG 300	3.0	
	BG 350	4.0	
Yodakandiya	BG 350	2.0	
	AT 353	2.0	
	BG 380	1.0	29.5
Secondary Seed Farm	BG 300	6.0	5,000
	BG 350	38.0	
	BW 351	3.0	
	AT 353	3.0	
	BG 380	14.0	
	BG 379-2	36.0	
Sub-total		29.5	100.0
3. Contract Farmer Organizations			
Halekade	BG 350	37.0	2,200
Aluthwewe	BG 350	25.0	1,250
Yokgasmulla	BG 350	20.0	1,200
Attanayala	BG 350	25.0	1,250
Ranna	BG 350	25.0	1,250
Pattiyapola	BG 350	25.0	1,250
Sub-total		157.0	8,400
4. Contract ASC			
Walasmulla	BG 350	5.0	200
Netolpitiya	BG 350	5.0	200
Moderawana	BG 350	3.0	100
Angunakolapelessa	BG 350	10.0	1,500
Sub-total		23.0	2,000
5. Contract MPCs			
Hungama	AT 353	29.0	3,480
	BW 351	5.0	750
	BG 350	4.0	600
	BG 94-1	5.0	750
	BG 304	13.0	1,560
	AT 303	22.0	2,640
	BG 300	29.0	3,480
Tissamaharana	BG 379-2	67.0	5,000
	BG 403		
	AT 353		
	BG 94-1		
Sub-total		167.0	13,000
6. Mahaweli Authority			
	AT 303	7.0	
	AT 44	44.0	
Sub-total		51.0	2,100
TOTAL		600.0 (=242.8ha)	41,500 (=866.1mt)

Source: Bata-ata seed farm in Hambantota district.

App. 2.2.3-39 Seed Production under Different Varieties (1995/96 Maha)

Varieties	Bata-ata Seed Farm			Ambalantota Government Seed Production Station		
	Foundation (ha)	Registered (ha)	Certified (mt)	Foundation (ha)	Registered (ha)	Certified (mt)
1. 3 Months						
BW272-6B	-	-	-	0.5	2.0	-
AT303	-	-	50.0	0.5	5.0	-
2. 3.5 Months						
BW351	-	17.0	-	1.0	5.0	-
AT354	1.0	-	-	-	-	-
BW267-3	-	-	-	1.0	3.0	-
BG350	-	-	50.0	-	-	-
3. 4 Months						
AT401	1.0	-	-	-	-	-
4. 4.5 Months						
BW451	-	-	-	0.5	1.0	-
Total	2.0	17.0	100.0	3.5	16.0	0
Sri Lanka	33.5	677.0	2,160.00	33.50	677.00	2,160.00

Source: "Seed and Planting Material Production Programme - 1995/96 Maha Session",
Seed and Planting Material Development Centre, Department of Agriculture, 1995.

App.2.2.3-40 Target Seed Paddy Requirement for Rural Seed Farms (1996)

(Unit: %)

Scheme	D.S. Division	Season	Varieties	3 Months	3.5 Months	4-4.5 Months	Total (mt)
Liyangastota	Ambalantota	Maha	Registered	0	44.4	55.6	18.0
			Certified	40.7	40.7	18.6	27.0
		Yala	Registered	62.5	37.5	0	8.0
			Certified	41.2	41.2	17.6	17.0
		Total	Registered	19.2	42.3	38.5	26.0
			Certified	40.9	40.9	18.2	44.0
	Hambantota	Maha	Registered	0	38.5	61.5	6.5
			Certified	16.7	60.0	23.3	30.0
		Yala	Registered	100.0	0	0	2.0
			Certified	37.5	50.0	12.5	16.0
		Total	Registered	23.5	29.4	47.1	8.5
			Certified	23.9	56.5	19.6	46.0
Muruthawela Reservoir	Weckraketiya	Maha	Registered	0	100.0	0	3.0
			Certified	0	81.8	18.2	5.5
		Yala	Registered	0	100.0	0	3.7
			Certified	77.8	22.2	0	4.5
		Total	Registered	0	100.0	0	6.7
			Certified	35.0	55.0	10.0	10.0
	Okwela	Maha	Registered	89.3	10.7	0	5.6
			Certified	36.4	63.6	0	5.5
		Yala	Registered	0	0	0	0
			Certified	0	100.0	0	2.3
		Total	Registered	89.3	10.7	0	5.6
			Certified	25.6	74.4	0	7.8
	Angunakolapelessa	Maha	Registered	10.0	90.0	0	10.3
			Certified	42.1	42.1	15.8	9.5
		Yala	Registered	66.7	33.3	0	6.0
			Certified	33.3	66.7	0	6.0
		Total	Registered	30.7	69.3	0	16.3
			Certified	38.7	51.6	9.7	15.5
	Tangalle	Maha	Registered	21.8	78.2	0	8.7
			Certified	33.3	50.0	16.7	12.0
		Yala	Registered	85.7	14.3	0	3.5
			Certified	52.6	47.4	0	9.5
		Total	Registered	40.2	59.8	0	12.2
			Certified	41.9	48.8	9.3	21.5
Beliatta	Maha	Registered	0	100.0	0	0.6	
		Certified	44.5	33.3	22.2	9.0	
	Yala	Registered	37.5	62.5	0	1.6	
		Certified	66.7	33.3	0	6.0	
	Total	Registered	27.3	72.7	0	2.2	
		Certified	53.4	33.3	13.3	15.0	
Badagiriya	Hambantota	Maha	Registered	0	38.5	61.5	6.5
			Certified	16.7	60.0	23.3	30.0
		Yala	Registered	100.0	0	0	2.0
			Certified	37.5	50.0	12.5	16.0
		Total	Registered	23.5	29.4	47.1	8.5
			Certified	23.9	56.5	19.6	46.0
Hambantota District		Maha	Registered	18.4	63.1	18.5	75.7
			Certified	29.7	45.3	25.0	150.0
		Yala	Registered	50.8	49.2	0	38.6
			Certified	43.1	50.8	6.1	82.3
		Total	Registered	29.3	58.4	12.3	114.3
			Certified	34.4	47.3	18.3	232.3

Source: "Agricultural Implementation Programme 1995/1996 - Hambantota District".

App. 2.2.3-41 Seed Production of Subsidiary Food Crops (1995/96 Maha)

Crop	Varieties	Bata-ata Seed Farm			Middeniya Government Farm		
		Foundation (ha)	Registered (ha)	Certified (mt)	Foundation (ha)	Registered (ha)	Certified (mt)
Cowpea	MI 35	-	1.0	2.0	-	1.0	1.0
	Bombay	0.5	1.0	-	-	-	-
	Vijaya	0.2	1.0	1.0 +5.0 ¹⁾	-	-	1.0
	Varuni	-	-	+5.0	-	1.0	-
Green Gram	MI 5	-	2.0	2.0 +10.0	-	-	2.0
	Harsha	-	-	-	-	1.0	-
Black Gram	MI 1	-	-	2.0	-	-	1.0
Soya Bean	PB 1	-	2.0	-	-	1.0	-
Maize	Badra	0.25	2.0	10.0 +5.0	-	-	2.0
Kurakkan	Ravi	-	-	0.5	-	-	0.5
Ground Nut	Tissa	-	1.0	-	-	1.0	-
	Walawe	-	-	-	-	1.0	-
	RS	0.25	-	-	-	-	-
	No.45	0.1	-	-	-	-	-
Chillie	MI 2	0.5	0.5	-	-	-	
Pigeon Pea	ICPL 87	-	-	3.0	-	-	
Gingelly	MI3	-	-	2.0	0.2	0.5	2.0
Total		1.8	10.5	22.5 +25.0	0.2	6.5	9.5
Sri Lanka		7.25	32.0	75.0 +159.0	7.25	32.0	75.0

Note: 1) indicates contract growing.

Source: "Seed and Planting Material Production Programme - 1995/96 Maha Season",
Seed and Planting Material Development Center, Department of Agriculture, 1995.

App. 2.2.3-42 Seed Production of Vegetables (1995/96 Maha)

Crop	Varieties	Bata-ata Seed Farm			Middeniya Government Farm		
		Basic (ha)	Standard (ha)	Contract Growing Standard (ha)	Basic (ha)	Standard (ha)	Contract Growing Standard (ha)
Snake Gourd	Long	0.25	1.0	-	-	-	-
Bitter Gourd	TW	0.25	-	-	-	-	-
Capsicum	CA8	-	2.0	2.0	-	1.0	-
Cucumber	LY 58	-	2.0	2.0	-	1.0	-
Luffa	LA 33	-	-	1.0	-	1.5	-
Spinach	Giant	-	0.5	-	-	0.5	-
Tampala	Green	-	-	-	-	0.5	-
Tomato	WR	-	1.0	-	-	1.0	-
Pumpkin	Ruhuno	-	2.0	-	-	-	-
Total		0.50	8.5	5.0	0	5.5	0
Sri Lanka		3.01	45.0	82.5	3.01	45.0	82.5

Source: "Seed and Planting Material Production Programme - 1995/96 Maha Season",
Seed and Planting Material Development Center, Department of Agriculture, 1995.

App. 2.2.3-43 Seed Prices of Paddy and Subsidiary Food Crops (1995-96)

(Unit: Rs/kg)

Crop	Foundation	Registered	Certified	Commercial
1. Seed Paddy				
Red and Samba	14.85	13.42	12.94	12.46
Others	14.37	12.94	12.46	11.98
2. Subsidiary Food Crops				
Cowpea (MI 35)	70	60	55	50
Cowpea (Others)	65	55	50	45
Green Gram	70	60	55	50
Maize/Sorghum	35	25	20	18
Kurukkan/Meneri	35	25	20	18
Soya Beans	55	45	40	32
Ground Nut	70	60	55	50
Gingelly	75	65	60	52
Pigeon Pea	55	45	40	35
Black Gram	75	65	58	52

Source: Price list of seeds and planting materials published by the Department of Agriculture, March, 1994.

App. 2.2.3-44 Seed Prices of Vegetables (1995-96)

(Unit: Rs/kg)

Crop	Registered	Certified	Commercial
Bitter Gourd	900.00	750.00	
Snake Gourd	900.00	750.00	
Capsicum	2,500.00	2,200.00	
Vegetable Cowpea	600.00	500.00	
Brinjal	900.00	800.00	
Okura	500.00	420.00	
Spinach	800.00	700.00	
Cucumber	850.00	750.00	
Cabbage (Lanka)	1,000.00	700.00	
Tomato	2,500.00	2,000.00	
Radish	800.00	550.00	
Bush Beans	200.00	190.00	185.00
Pole Beans	210.00	200.00	195.00
Chillies	2,500.00	900.00	850.00

Source: Price list of seeds and planting materials published by the Department of Agriculture, March, 1994.

App. 2.2.3-46 Rice Mill and Storage Facilities Owned by Paddy Marketing Board

Rice Mill Facilities				Storage Facilities		
Name	D.S.Division	Present Status of Operation	Milling Capacity (t/hour)	No.	Location	Capacity (t)
Ambalantota Rice Mill Station	Ambalantota	Closed	-	1	Ambalantota	731
Moraketiya Rice Mill Station	Embilipitiya (Ratnapura District)	Closed	-	1	Moraketiya	731
Kachigala Ara Rice Mill Station	Angunakolapelessa	Operated	3	1	Kachigala Ara	731
Lunugamwehera Rice Mill Station	Lunugamwehera	Closed	-	1	Lunugamwehera	731
				6	Weerawila, Pallemalala, Sooriyawewa, Dehigahalanda, Sooriara (Moneragala District), Kuthigala (Ratnapura District)	4,386

Source: Paddy Marketing Board in Hambantota District.

App. 2.2.3-47 Utilization of Institutional Credits for Last Three Years

(Unit: %)

Item	Liyangastota	Muruthawela Reservoir	Badagiriya
1. Loan Applied			
Yes	67.4	45.0	52.4
No	32.6	55.0	47.6
2. Institution			
People's Bank	16.9	7.9	12.9
Bank of Ceylon	35.6	29.5	31.5
Regional Rural Development Bank	32.2	46.6	38.9
Sanasa	1.7	11.4	8.6
Department of Agrarian Services	3.4	2.3	2.5
Co-operative Rural Bank	5.1	-	2.5
Other	5.1	2.3	3.1
3. Purpose			
Cultivation	90.0	75.3	82.7
Housing	3.3	14.6	9.3
Purchase of Tractor	1.7	5.6	3.7
Loan Repayment	-	1.1	0.6
Trade	1.7	3.4	2.5
Rice Milling	3.3	-	1.2

Source: Baseline Survey.

App. 2.2.3-48 Refusal of Loan and Reasons Therefor

(Unit: %)

Item	Liyangastota	Muruthawela Reservoir	Badagiriya
1. Loan Refusal			
Yes	9.3	14.0	19.0
No	90.7	86.0	81.0
2. Institution			
Regional Rural Development Bank	44.5	59.3	-
Bank of Ceylon	33.3	33.3	-
People's Bank	22.2	7.4	50.0
Co-operative Rural Bank	-	-	50.0
3. Purpose			
Cultivation	85.7	82.1	75.0
Purchase of Agricultural Equipment	14.3	3.6	-
Housing	-	3.6	-
Purchase of Tractor	-	7.1	25.0
Other	-	3.6	-
3. Reason for Loan Refusal			
Trouble with Bank Officer	25.0	38.5	-
Default on Previous Loan Payment	37.5	23.1	75.0
Low Income	-	19.2	25.0
Age Limit	12.5	19.2	-
No Surety	25.0	-	-

Source: Baseline Survey.

App. 2.2.3-49 Utilization of Non-institutional Credits

(Unit: %)

Item	Liyangastota	Muruthawela Reservoir	Badagiriya
1. Loan Applied			
Yes	34.9	38.5	57.1
No	65.1	61.5	42.9
2. Source			
Local Money Lender	24.2	23.9	21.4
NGO	3.0	10.2	21.4
Friends/Relatives	33.3	37.5	21.4
Shopkeeper/Trader	27.3	22.7	28.6
Purchaser of Agricultural Produce	6.1	3.4	7.2
Other	6.1	2.3	-
3. Purpose			
Cultivation	84.0	74.6	83.4
Medical Treatment	8.0	9.0	-
Purchase of Consumer Goods	8.0	13.4	8.3
Trade	-	3.0	8.3

Source: Baseline Survey.

App. 2.2.3-50 Saving Habits

(Unit: %)

Item	Liyangastota	Muruthawela Reservoir	Badagiriya
1. Account Opening			
Yes	60.5	45.0	66.7
No	39.5	55.0	33.3
2. Institution			
People's Bank	22.9	14.6	42.9
Bank of Ceylon	39.6	50.0	21.4
National Savings Bank	2.1	1.2	-
Regional Rural Development Bank	35.4	31.7	35.7
Other	-	2.5	-
3. Account			
Current Account	9.3	3.4	7.7
Savings Account	81.4	77.5	76.9
Deposit Account	9.3	6.7	15.4
Janasaviya/Samurdhi Account	-	12.4	-

Source: Baseline Survey.

App. 2.2.3-51 Crop Insurance

(Unit: %)

Items	Liyangastota	Muruthawela Reservoir	Badagiriya
1. Crop Insurance Applied			
Yes	51.8	17.6	52.4
No	48.2	82.4	47.6
2. Reasons for Non-application			
Difficult Process	14.6	11.3	20.0
Delay in Payment of Compensation	41.5	52.9	50.0
Lack of Income	14.6	11.3	-
Lack of Information	9.8	13.2	10.0
No Need	14.6	11.3	20.0
No Crop Damage	4.9	-	-

Source: Baseline Survey.

APPENDIX-2.3 IRRIGATION AND DRAINAGE

LIST OF TABLES

App.2.3-1	Calculation for RB Issue in Liyangastota Scheme (1985 Sep.- 1995 Aug.) (1/2-2/2)	A2.3-1
App.2.3-2	Existing Water Balance Study in Liyangastota Walawe RB Scheme (1/2-2/2)	A2.3-3
App.2.3-3	Existing Water Balance Study in Liyangastota Walawe LB Scheme (1/2-2/2)	A2.3-5
App.2.3-4	Existing Field Water Requirement in Liyangastota Scheme Walawe RB/LB (1985/86) (1/10-10/10)	A2.3-7
App.2.3-5	Existing Water Balance Study in Muruthawela LB Scheme (1984/85-1994/95) (1/2-2/2)	A2.3-17
App.2.3-6	Existing Field Water Requirement in Muruthawela LB Scheme (1991/92) (1/4-4/4)	A2.3-19
App.2.3-7	Existing Water Balance Study in Urubokka Oya Scheme (1991 Sep.-1995 Aug.) (1/3-3/3)	A2.3-23
App.2.3.8	Existing Field Water Requirement in Urubokka Oya Scheme (1991/92) (1/4-4/4)	A2.3-26
App.2.3-9	Existing Water Balance Study in Kirama Oya Scheme (1984/85-1994/95) (1/2-2/2)	A2.3-30
App.2.3-10	Existing Field Water Requirement in Kirama Oya Scheme (1991/92) (1/4-4/4)	A2.3-32
App.2.3-11	Water Issue Record of Badagiriya Tank (1984 Sep.-1996 Jan.) (1/2-2/2)	A2.3-36
App.2.3-12	Existing Water Balance Study in Badagiriya Scheme (1984/85-1994/95) (1/2-2/2)	A2.3-38

App. 2.3-1 Calculation for RB Issue in Liyangastota Scheme (1985 Sep. ~ 1995 Aug.)

* Station of Rainfall Data

1) 1985 Sep. ~ 1988 Sep.: Embilipitiya

2) 1988 Oct. ~ 1996 Oct.: Mamadola

	Tank Water Level	*Rainfall (mm)	Changes in Tank Volume (appearance) (a)	Outflow at Ridiyagama Tank			Inflow at Ridiyagama Tank		Inflow at Liyangastota Anicut		RB Canl Issue (g-f) (Ac.ft)	
				Ridiyagama Tank Issue (WLBStoic) (b)	Evaporation (Ridiyagama) (A=2,100acs) (c)	Total Outflow (d) (b+c) (Ac.ft)	Iso-Yield Maha: 500ac.ft/sq.ml Yala: 300ac.ft/sq.ml CA=11.0 mile2 (e) (Ac.ft)	LB Feeder Canal Issue (f) (a+d-e) (Ac.ft)	JICA Uda Walawe Data ('000 m3) (g)	(g)		
				(Ac.ft)	(Ac.ft)	(Ac.ft)	(Ac.ft)	(Ac.ft)	(Ac.ft)	(Ac.ft)		
1985-86	Sep	N.A.	135	N.A.	493	493	917	917				
	Oct	N.A.	265	N.A.	463	463	917	917				
	Nov	N.A.	224	N.A.	372	372	917	917				
	Dec	N.A.	179	N.A.	372	372	917	917				
	Jan	N.A.	143	N.A.	430	430	917	917				
	Feb	N.A.	97	N.A.	419	419	917	917				
	Maha total (average)	1,043	0	0	2,549	2,549	4,583	4,583	0			
	Mar	N.A.	49	N.A.	464	464	550	9,439	26,170	60,357	50,918	
	Apr	17.1	138	-2,250	11,770	469	12,239	550	9,876	52,470	42,520	
	May	15.8	49	-2,250	12,181	496	12,676	550	10,578	35,440	28,720	
	Jun	14.6	19	-1,350	11,959	518	12,478	550	8,544	33,860	27,439	
	Jul	13.8	7	-3,600	12,166	528	12,694	550	11,693	20,790	16,848	
	Aug	11.8	55	750	10,956	536	11,493	550	3,300	243,210	175,883	
	Yala total (average)	316	-8,700	59,032	3,012	62,044	3,300	50,130	243,210	175,883	125,754	
	Total (Average)	1,359	-8,700	59,032	5,561	62,044	7,883	50,130	243,210	175,883	125,754	
1986-87	Sep	12.3	99	750	0	493	493	917	327	11,930	9,668	9,341
	Oct	12.7	165	1,800	9,673	463	10,136	917	11,019	51,920	42,075	31,055
	Nov	13.7	57	3,750	10,991	372	11,363	917	14,196	36,760	29,789	15,593
	Dec	15.8	44	-1,650	11,430	372	11,802	917	9,235	63,720	51,637	42,401
	Jan	14.8	67	-450	12,173	430	12,603	917	11,238	64,990	52,666	41,428
	Feb	14.6	1	-2,550	9,689	419	10,108	917	6,641	21,820	17,682	11,041
	Maha total (average)	433	1,650	53,958	2,549	56,506	5,500	52,656	251,140	203,317	150,861	
	Mar	0.0	187	0	0	464	464	550	0	28,970	23,476	23,476
	Apr	13.4	238	1,050	7,691	469	8,160	550	8,660	52,950	42,909	34,249
	May	14.0	29	2,700	11,733	496	12,229	550	14,379	40,300	32,658	18,279
	Jun	15.5	11	-4,650	11,256	518	11,775	550	6,575	35,340	28,639	22,064
	Jul	12.9	0	-9,775	12,041	528	12,569	550	2,244	25,960	21,037	18,793
	Aug	7.0	112	7,675	3,853	536	4,390	550	11,515	5,960	4,846	0
	Yala total (average)	577	-3,000	46,575	3,012	49,587	3,300	43,372	189,500	153,566	116,862	
	Total (Average)	1,010	-8,700	100,532	5,561	106,093	8,800	96,029	440,640	357,083	267,723	
1987-88	Sep	11.8	101	2,250	0	493	493	917	1,827	7,330	5,940	4,113
	Oct	13.0	265	4,650	7,535	463	7,998	917	11,732	41,020	33,241	21,510
	Nov	15.6	200	-450	8,061	372	8,433	917	7,067	65,860	53,371	46,305
	Dec	15.3	55	300	12,164	372	12,536	917	11,920	47,970	38,874	26,954
	Jan	15.5	58	-900	12,397	430	12,827	917	11,010	40,950	33,185	22,175
	Feb	15.0	78	3,900	4,922	419	5,341	917	8,325	46,920	38,023	29,698
	Maha total (average)	757	9,750	45,081	2,549	47,629	5,500	51,879	250,050	202,634	150,754	
	Mar	17.2	150	-750	5,194	464	5,659	550	4,359	45,770	37,091	32,732
	Apr	16.8	178	-900	9,975	469	10,444	550	8,994	98,330	79,684	70,690
	May	16.3	83	-1,200	12,010	496	12,506	550	10,756	90,890	73,655	62,899
	Jun	15.6	64	-900	11,389	518	11,907	550	10,457	35,340	28,639	18,181
	Jul	15.1	50	-1,200	11,676	528	12,204	550	10,454	35,960	29,141	18,687
	Aug	14.4	38	3,450	1,284	536	1,821	550	4,721	22,390	18,144	13,423
	Yala total (average)	561	-1,500	51,529	3,012	54,541	3,300	49,741	328,680	266,353	216,612	
	Total (Average)	1,318	8,250	96,610	5,561	102,170	8,800	101,620	578,730	468,987	367,367	
1988-89	Sep	16.3	80	-1,500	5,880	493	6,374	917	3,957	12,230	9,911	5,954
	Oct	15.5	134	-1,950	11,456	463	11,920	917	9,053	41,920	33,971	24,918
	Nov	14.4	205	-750	7,031	372	7,403	917	5,236	73,360	59,449	53,713
	Dec	14.0	121	450	12,384	372	12,756	917	12,289	26,160	21,199	8,910
	Jan	14.3	93	-1,500	9,724	430	10,154	917	7,737	35,850	29,052	21,315
	Feb	13.4	17	150	0	419	419	917	0	21,820	17,682	17,682
	Maha total (average)	650	-5,100	46,475	2,549	49,024	5,500	38,772	211,340	171,264	132,492	
	Mar	13.5	67	-1,800	9,810	464	10,274	550	7,924	26,070	21,126	13,202
	Apr	12.5	105	1,050	8,427	469	8,897	550	9,397	52,950	42,909	33,513
	May	13.1	20	1,950	10,382	496	10,878	550	12,278	63,600	51,540	39,262
	Jun	14.2	44	750	11,133	518	11,652	550	11,852	37,240	30,178	18,327
	Jul	14.6	85	750	6,316	528	6,844	550	7,044	38,660	31,329	24,285
	Aug	15.0	42	2,100	0	536	536	550	2,086	15,120	12,253	10,166
	Yala total (average)	362	4,800	46,069	3,012	49,081	3,300	50,581	233,640	189,335	138,755	
	Total (Average)	1,012	-300	92,544	5,561	98,105	8,800	89,353	444,980	360,600	271,247	
1989-90	Sep	16.2	65	-3,000	7,035	493	7,529	917	3,612	6,530	5,292	1,680
	Oct	14.5	42	6,750	10,266	463	10,729	917	3,063	41,020	33,241	30,179
	Nov	10.8	92	2,250	9,077	372	9,449	917	10,782	55,560	45,024	34,242
	Dec	12.0	11	600	10,721	372	11,093	917	10,776	40,970	33,201	22,425
	Jan	12.3	52	1,350	8,863	430	9,293	917	9,726	43,050	34,887	25,160
	Feb	13.1	0	7,500	0	419	419	917	7,002	40,420	32,755	25,753
	Maha total (average)	261	1,950	45,963	2,549	48,511	5,500	44,951	227,550	184,400	139,439	
	Mar	17.3	75	-4,800	13,959	464	14,424	550	9,074	39,670	32,147	23,074
	Apr	14.6	56	3,150	10,364	469	10,833	550	13,433	53,550	43,395	29,963
	May	16.3	124	-2,850	11,193	496	11,689	550	8,288	58,200	47,164	38,875
	Jun	14.8	48	-1,650	12,685	518	13,203	550	11,003	41,440	33,582	22,579
	Jul	13.8	12	2,400	4,605	528	5,133	550	6,983	32,760	26,548	19,565
	Aug	15.2	0	3,150	0	536	536	550	3,136	21,090	17,091	13,954
	Yala total (average)	315	-600	52,806	3,012	55,818	3,300	51,918	246,710	199,927	148,010	
	Total (Average)	576	1,350	98,768	5,561	104,329	8,800	96,879	474,260	384,327	287,449	

App. 2.3-1 Calculation for RB Issue in Liyangastota Scheme (1985 Sep. ~ 1995 Aug.)

(2/2)

* Station of Rainfall Data

1) 1985 Sep. ~ 1988 Sep.: Embilipitiya

2) 1988 Oct. ~ 1996 Oct.: Mamadola

	Tank Water Level	Rainfall (mm)	Changes in Tank Volume (appearance) (a)	Outflow at Ridiyagama Tank			Inflow at Ridiyagama Tank		Inflow at Liyangastota Anicut		RB Canl Issue (g-f) (Ac.ft)	
				Ridiyagama Tank Issue (WLBStuice) (b) (Ac.ft)	Evaporation (Ridiyagama) A=2,100acs (c) (Ac.ft)	Total Outflow (d) (b+c) (Ac.ft)	Iso-Yield Maha 50ha (c) (Ac.ft)	LB Feeder Canal Issue (f) (a+d-e) (Ac.ft)	JICA Uda Walawe Data (g) (Ac.ft)	(g) (Ac.ft)		
	(f1)	(mm)		(Ac.ft)	(Ac.ft)	(Ac.ft)	(c)	(f)	(g)	(g-f)		
1990/91	Sep	16.9	17	-13,200	11,254	493	11,747	917	0	4,430	3,590	3,590
	Oct	9.6	238	6,150	4,165	463	4,629	917	9,862	42,120	34,133	24,271
	Nov	13.0	256	4,650	5,016	372	5,388	917	9,121	69,260	56,126	47,005
	Dec	15.6	155	-5,400	8,146	372	8,518	917	2,201	40,970	33,201	31,000
	Jan	12.6	203	4,350	4,514	430	4,944	917	8,377	43,000	34,846	26,469
	Feb	15.0	3	3,450	417	419	836	917	3,369	40,000	32,415	29,045
	Maha total (average)	16.9	873	0	33,512	2,549	36,060	5,500	32,930	239,780	194,311	161,381
	Mar	16.9	47	-4,650	13,386	464	13,850	550	8,650	39,000	31,605	22,954
	Apr	14.3	129	3,000	9,101	469	9,571	550	12,021	52,000	42,139	30,119
	May	16.0	104	1,200	12,345	496	12,841	550	13,491	40,000	32,415	18,924
	Jun	16.7	250	300	9,659	518	10,178	550	9,928	35,000	28,363	18,435
	Jul	16.8	91	-300	5,686	528	6,214	550	5,364	25,000	20,259	14,895
	Aug	16.7	39	2,100	0	536	536	550	2,086	5,000	4,052	1,965
	Yala total (average)	16.6	1,650	1,650	50,178	3,012	53,190	3,300	51,540	196,000	158,833	107,293
Total (Average)	16.33	1,650	1,650	83,689	5,561	89,250	8,800	84,470	435,780	353,144	268,674	
1991/92	Sep	17.8	29	-11,100	11,634	493	12,127	917	110	7,000	5,673	5,673
	Oct	11.7	265	6,000	7,095	463	7,559	917	12,642	41,000	33,225	20,583
	Nov	15.0	195	2,400	10,891	372	11,263	917	12,747	65,000	52,674	39,928
	Dec	16.3	150	1,050	12,963	372	13,335	917	13,468	47,000	38,088	24,619
	Jan	16.9	25	-3,000	8,106	430	8,536	917	4,619	40,000	32,415	27,296
	Feb	15.3	0	3,150	0	419	419	917	2,652	46,000	37,277	34,625
	Maha total (average)	17.0	665	-1,500	50,690	2,549	53,238	5,500	46,238	246,000	199,352	153,113
	Mar	17.0	0	-10,650	10,678	464	11,142	550	0	45,000	36,467	36,467
	Apr	11.1	16	-7,881	5,842	469	6,311	550	0	52,000	42,139	42,139
	May	5.8	145	938	4,960	496	5,456	550	5,843	40,000	32,415	26,572
	Jun	6.6	20	-2,351	4,674	518	5,193	550	2,292	35,000	28,363	26,071
	Jul	3.7	65	851	2,232	528	2,760	550	3,061	25,000	20,259	17,199
	Aug	5.3	38	281	429	536	965	550	696	5,000	4,052	3,356
	Yala total (average)	16.2	1,813	-18,813	28,613	3,012	31,627	3,300	11,892	202,000	163,695	151,803
Total (Average)	16.33	1,650	-18,813	79,504	5,561	85,065	8,800	58,131	448,000	363,047	304,916	
1992/93	Sep	5.5	113	6,513	480	493	973	917	6,569	7,000	5,673	5,673
	Oct	10.2	88	-1,350	6,409	463	6,872	917	4,606	41,000	33,225	28,620
	Nov	9.4	271	9,300	6,448	372	6,820	917	15,203	73,000	59,157	43,954
	Dec	14.6	95	5,850	7,850	372	8,222	917	13,155	26,000	21,070	7,914
	Jan	17.8	22	-2,100	11,635	430	12,065	917	9,048	35,000	28,363	19,315
	Feb	16.7	18	-300	10,353	419	10,771	917	9,555	21,000	17,018	7,463
	Maha total (average)	16.5	666	17,913	43,174	2,549	45,723	5,500	58,135	203,000	164,506	107,267
	Mar	16.5	28	3,900	0	464	464	550	3,814	26,000	21,070	17,255
	Apr	18.7	106	-6,450	13,548	469	14,018	550	7,018	52,000	42,139	35,122
	May	15.1	169	6,000	7,973	496	8,469	550	13,918	40,000	32,415	18,497
	Jun	18.4	117	-1,050	9,792	518	10,310	550	8,710	35,000	28,363	19,653
	Jul	17.8	45	-5,400	12,182	528	12,710	550	6,760	25,000	20,259	13,499
	Aug	14.8	0	4,500	5,535	536	6,071	550	10,021	5,000	4,052	0
	Yala total (average)	14.8	466	1,500	49,030	3,012	52,042	3,300	50,242	183,000	148,298	104,026
Total (Average)	16.33	1,072	19,413	92,704	5,561	97,764	8,800	108,377	385,000	312,804	211,292	
1993/94	Sep	17.3	12	-2,400	5,561	493	6,054	917	2,737	7,000	5,673	5,673
	Oct	16.0	154	2,400	9,475	463	9,939	917	11,422	41,000	33,225	21,803
	Nov	17.3	337	900	6,104	372	6,476	917	4,660	73,000	59,157	54,497
	Dec	16.8	237	-1,950	6,414	372	6,786	917	3,919	26,000	21,070	17,151
	Jan	15.8	56	-4,600	6,395	430	6,825	917	1,108	21,000	17,018	15,909
	Feb	13.1	12	6,900	0	419	419	917	6,402	26,000	21,070	14,668
	Maha total (average)	16.4	642	-750	33,949	2,549	36,498	5,500	30,248	194,000	157,212	126,964
	Mar	16.9	150	-3,000	12,285	464	12,749	550	9,199	52,000	42,139	32,940
	Apr	15.3	102	-3,750	9,314	469	9,783	550	5,483	40,000	32,415	26,932
	May	13.2	38	-300	11,598	496	12,093	550	11,243	35,000	28,363	17,120
	Jun	13.0	10	-4,050	12,079	518	12,598	550	7,993	25,000	20,259	12,262
	Jul	10.8	60	2,700	9,013	528	9,541	550	11,721	5,000	4,052	0
	Aug	12.3	45	5,850	527	536	1,063	550	6,363	7,000	5,673	5,673
	Yala total (average)	16.3	385	-2,550	54,846	3,012	57,858	3,300	52,008	164,000	132,901	89,253
Total (Average)	16.33	1,072	-3,300	83,795	5,561	94,456	8,800	82,256	358,000	290,113	216,218	
1994/95	Sep	15.5	214	-1,650	8,174	493	8,667	917	6,101	7,330	5,940	5,940
	Oct	14.6	250	2,850	8,440	463	8,903	917	10,836	41,000	33,241	22,405
	Nov	16.2	137	-4,200	6,606	372	6,978	917	1,861	65,860	53,371	51,510
	Dec	13.8	29	-600	11,265	372	11,637	917	10,120	47,970	38,874	28,753
	Jan	13.5	132	6,000	8,140	430	8,570	917	13,653	40,950	33,155	19,532
	Feb	16.8	55	-150	0	419	419	917	0	46,920	38,023	38,023
	Maha total (average)	16.1	817	2,250	42,625	2,549	45,174	5,500	42,371	250,050	202,634	160,223
	Mar	16.8	11	-3,900	12,797	464	13,261	550	8,811	45,770	37,091	28,279
	Apr	14.6	185	3,900	9,918	469	10,388	550	13,738	98,330	79,684	65,945
	May	16.8	133	-1,800	9,414	496	9,910	550	7,560	90,890	73,655	66,095
	Jun	15.8	53	-300	11,605	518	12,123	550	11,273	35,340	28,639	17,365
	Jul	15.6	29	-3,600	10,986	528	11,514	550	7,364	35,960	29,141	21,777
	Aug	13.6	42	-1,200	642	536	1,186	550	0	22,390	18,144	18,144
	Yala total (average)	16.3	453	-6,900	55,370	3,012	58,382	3,300	48,747	328,680	266,353	217,607
Total (Average)	16.33	1,270	-4,650	97,995	5,561	103,556	8,800	91,318	578,730	468,987	377,830	

App. 2.3-2 Existing Water Balance Study in Llyangastota Walawe RB Scheme

(1/2)

(1985/86~1994/95)

* Station of Rainfall Data
 1) 1985 Sep-1988 Sep: Embilipitiya
 2) 1988 Oct-1995 Aug: Mamadola

Command Area = 2,454 ha

	RB Issue			*Rainfall		Unit FWR		FIR A=2,454ha (100%) (i) (h x A) (000m ³)	Water Balance		Cultivated Area Possible Area	
	(c) (Ac ft)	(d) (000m ³)	(e) (dx.50%)	ER		(g) (mm)	(h) (g-f) (mm)		Volume (j) (e-i) (000m ³)	Area (k) (j/g) (ha)	(l) (k+2,454) (ha)	(m) (l/2,454) (%)
				(f) (mm)	(g) (mm)							
1985/86												
Sep	N.A.			135	73							
Oct	N.A.			265	160							
Nov	N.A.			224	133							
Dec	N.A.			179	103							
Jan	N.A.			143	79							
Feb	N.A.			97	48							
Maha total	0	0	0	1,043	597						N.A.	N.A.
Mar	N.A.		0	49	0	0	0	0	0	0		
Apr	50,918	62,833	31,416	138	75	182	107	2,614	28,803			
May	32,644	40,282	20,141	49	0	343	343	8,429	11,712			
Jun	18,142	22,387	11,194	19	0	267	267	6,562	4,632			
Jul	18,895	23,316	11,658	7	0	291	291	7,137	4,521			
Aug	5,155	6,361	3,181	55	0	239	239	5,872	-2,692			
Yala total	125,754	155,180	77,590	316	75	1,323	1,248	30,614	46,976	3,552	6,006	245%
Total	125,754	155,180	77,590	1,359	672	1,323	1,248	30,614				
1986/87												
Sep	9,341	11,527	5,764	99	49	0	0	0	5,764			
Oct	31,055	38,322	19,161	165	94	182	88	2,161	17,000			
Nov	15,593	19,242	9,621	57	0	302	302	7,419	2,202			
Dec	42,401	52,323	26,162	44	0	209	209	5,136	21,026			
Jan	41,428	51,122	25,561	67	28	234	206	5,058	20,504			
Feb	11,041	13,625	6,813	1	0	169	169	4,155	2,658			
Maha total	150,861	186,162	93,081	433	171	1,096	975	23,928	69,153	6,308	8,762	357%
Mar	23,476	28,970	14,485	187	109	0	0	0	14,485			
Apr	34,249	42,263	21,132	238	143	182	39	958	20,174			
May	18,279	22,557	11,278	29	0	343	343	8,429	2,849			
Jun	22,064	27,227	13,613	11	0	267	267	6,562	7,051			
Jul	18,793	23,191	11,596	0	0	291	291	7,137	4,458			
Aug	0	0	0	112	58	239	182	4,457	-4,457			
Yala total	116,862	144,208	72,104	577	309	1,323	1,122	27,543	44,561	3,369	5,823	237%
Total	267,723	330,370	165,185	1,010	479	2,419	2,097	51,471				
1987/88												
Sep	4,113	5,076	2,538	101	51	0	0	0	2,538			
Oct	21,510	26,543	13,271	265	151	53	0	0	13,271			
Nov	46,305	57,140	28,570	200	117	294	177	4,349	24,221			
Dec	26,954	33,261	16,631	55	0	248	248	6,096	10,535			
Jan	22,175	27,363	13,682	58	0	207	207	5,091	8,590			
Feb	29,698	36,647	18,324	78	35	244	208	5,113	13,211			
Maha total	150,754	186,031	93,015	757	364	1,047	841	20,649	72,367	6,911	9,365	382%
Mar	32,732	40,391	20,196	150	83	122	38	942	19,254			
Apr	70,690	87,231	43,616	178	102	299	197	4,832	38,783			
May	62,899	77,617	38,809	83	38	307	269	6,603	32,206			
Jun	18,181	22,436	11,218	64	26	254	229	5,610	5,608			
Jul	18,687	23,060	11,530	50	0	298	298	7,302	4,228			
Aug	13,423	16,564	8,282	38	0	83	83	2,040	6,242			
Yala total	216,612	267,300	133,650	561	249	1,363	1,114	27,328	106,321	7,802	10,256	418%
Total	367,367	453,330	226,665	1,318	613	2,410	1,955	47,977				
1988/89												
Sep	5,954	7,347	3,674	80	37	53	17	413	3,261			
Oct	24,918	30,749	15,374	134	73	304	231	5,660	9,714			
Nov	53,713	66,282	33,141	205	120	242	121	2,975	30,166			
Dec	8,910	10,995	5,498	121	64	199	135	3,315	2,183			
Jan	21,315	26,303	13,151	93	45	239	194	4,761	8,391			
Feb	17,682	21,820	10,910	17	0	59	59	1,443	9,467			
Maha total	132,492	163,495	81,748	650	339	1,095	757	18,567	63,180	5,768	8,222	335%
Mar	13,202	16,291	8,146	67	28	182	154	3,768	4,378			
Apr	33,513	41,354	20,677	105	53	317	264	6,483	14,194			
May	39,262	48,449	24,224	20	0	274	274	6,718	17,507			
Jun	18,327	22,615	11,307	44	0	286	286	7,026	4,281			
Jul	24,285	29,968	14,984	85	40	207	167	4,093	10,891			
Aug	10,166	12,545	6,273	42	0	0	0	0	6,273			
Yala total	138,755	171,223	85,612	362	121	1,266	1,145	28,088	57,524	4,544	6,998	285%
Total	271,247	334,718	167,359	1,012	460	2,361	1,901	46,655				
1989/90												
Sep	1,680	2,073	1,036	65	26	53	27	666	370			
Oct	30,179	37,241	18,620	42	0	304	304	7,451	11,169			
Nov	34,242	42,255	21,128	92	45	242	197	4,831	16,296			
Dec	22,425	27,672	13,836	11	0	199	199	4,882	8,954			
Jan	25,160	31,048	15,524	52	0	239	239	5,867	9,637			
Feb	25,753	31,779	15,890	0	0	59	59	1,443	14,446			
Maha total	139,439	172,068	86,034	261	71	1,095	1,024	25,141	60,893	5,559	8,013	327%
Mar	23,074	28,473	14,237	75	33	182	149	3,646	10,590			
Apr	29,963	36,974	18,487	56	0	317	317	7,790	10,697			
May	38,875	47,972	23,986	124	66	274	205	5,096	18,890			
Jun	22,579	27,862	13,931	48	0	286	286	7,026	6,905			
Jul	19,565	24,143	12,071	12	0	207	207	5,073	6,999			
Aug	13,954	17,220	8,610	0	0	0	0	0	8,610			
Yala total	148,010	182,644	91,322	315	99	1,266	1,167	28,632	62,690	4,952	7,406	302%
Total	287,449	354,712	177,356	576	170	2,361	2,191	53,773				

App. 2.3-2 Existing Water Balance Study in Liyangastota Walawe RB Scheme

(1985/86-1994/95)

* Station of Rainfall Data

1) 1985 Sep-1988 Sep: Embilipitiya

2) 1988 Oct-1995 Aug: Mamadola

Command Area = 2,454 ha

	RB Issue	*Rainfall		ER		Unit		FIR A=2,454ha (100%) (i) (h x A) (000m ³)	Water Balance		Cultivated Area		
		(c)	(d)	(e)	(f)	(g)	(h)		Volume	Area	(i)	(m)	
		(Ac ft)	(000m ³)	(x50%)	(mm)	(mm)	(mm)		(g-f)	(j)	(k)	(k+2,454)	(l/2,454)
									(e-i)	(j/g)	(ha)	(%)	
1990/91	Sep	3,590	4,430	2,215	17	0	182	182	4,457	-2,242			
	Oct	24,271	29,950	14,975	238	142	332	190	4,667	10,308			
	Nov	47,005	58,005	29,002	256	155	202	47	1,158	27,845			
	Dec	31,000	38,254	19,127	155	87	224	137	3,365	15,762			
	Jan	26,469	32,663	16,331	203	119	166	47	1,149	15,182			
	Feb	29,045	35,842	17,921	3	0	59	59	1,443	16,478			
	Maha total	161,381	199,144	99,572	873	503	1,165	662	16,238	83,334	7,155	9,609	392%
	Mar	22,954	28,325	14,163	47	0	182	182	4,457	9,706			
	Apr	30,119	37,167	18,583	129	69	317	248	6,087	12,496			
	May	18,924	23,353	11,676	104	53	274	221	5,427	6,249			
	Jun	18,435	22,749	11,375	250	150	286	136	3,334	8,041			
	Jul	14,895	18,381	9,190	91	44	207	163	3,989	5,201			
	Aug	1,965	2,425	1,213	39	0	0	0	0	1,213			
	Yala total	107,293	132,400	66,200	660	317	1,266	949	23,293	42,907	3,390	5,844	238%
	Total	268,674	331,544	165,772	1,533	820	2,431	1,611	39,532				
1991/92	Sep	5,562	6,864	3,432	29	0	182	182	4,457	-1,025			
	Oct	20,583	25,400	12,700	265	161	332	172	4,211	8,488			
	Nov	39,928	49,271	24,635	195	114	202	88	2,165	22,470			
	Dec	24,619	30,350	15,190	150	84	224	140	3,447	11,743			
	Jan	27,796	34,300	17,150	25	0	166	166	4,076	13,074			
	Feb	34,625	42,727	21,364	0	0	59	59	1,443	19,920			
	Maha total	153,113	188,942	94,471	665	358	1,165	807	19,800	74,671	6,411	8,865	361%
	Mar	36,467	45,000	22,500	0	0	182	182	4,457	18,043			
	Apr	42,139	52,000	26,000	16	0	317	317	7,790	18,210			
	May	26,572	32,789	16,395	145	80	274	194	4,759	11,635			
	Jun	26,071	32,172	16,086	20	0	286	286	7,026	9,060			
	Jul	17,199	21,223	10,612	65	26	207	180	4,425	6,187			
	Aug	3,356	4,141	2,070	38	0	0	0	0	2,070			
	Yala total	151,803	187,325	93,663	282	106	1,266	1,160	28,458	65,205	5,151	7,605	310%
	Total	304,916	376,267	188,133	947	464	2,431	1,966	48,257				
1992/93	Sep	0	0	0	113	59	0	0	0	0			
	Oct	28,620	35,317	17,658	88	42	182	140	3,432	14,226			
	Nov	43,954	54,240	27,120	271	165	302	138	3,376	23,744			
	Dec	7,914	9,766	4,883	95	46	209	163	3,996	887			
	Jan	19,315	23,835	11,917	22	0	234	234	5,735	6,182			
	Feb	7,463	9,209	4,605	18	0	169	169	4,155	450			
	Maha total	107,267	132,367	66,183	606	312	1,096	843	20,694	45,489	4,150	6,604	269%
	Mar	17,255	21,293	10,647	28	0	0	0	0	10,647			
	Apr	35,122	43,340	21,670	106	54	182	127	3,127	18,544			
	May	18,497	22,825	11,412	169	96	343	247	6,061	5,351			
	Jun	19,653	24,251	12,126	117	62	267	206	5,051	7,075			
	Jul	13,499	16,658	8,329	45	0	291	291	7,137	1,192			
	Aug	0	0	0	0	0	239	239	5,872	-5,872			
	Yala total	104,026	128,368	64,184	466	212	1,323	1,110	27,249	36,935	2,793	5,247	214%
	Total	211,292	260,735	130,367	1,072	524	2,419	1,954	47,943				
1993/94	Sep	2,936	3,622	1,811	12	0	53	53	1,309	502			
	Oct	21,803	26,905	13,453	154	86	304	217	5,332	8,121			
	Nov	54,497	67,250	33,625	337	209	242	33	802	32,823			
	Dec	17,151	21,164	10,582	237	142	199	57	1,406	9,176			
	Jan	15,909	19,632	9,816	56	0	239	239	5,867	3,949			
	Feb	14,668	18,100	9,050	12	0	59	59	1,443	7,607			
	Maha total	126,964	156,674	78,337	642	437	1,095	658	16,159	62,178	5,676	8,130	331%
	Mar	32,940	40,648	20,324	130	70	182	112	2,742	17,582			
	Apr	26,932	33,234	16,617	102	51	317	266	6,536	10,081			
	May	17,120	21,126	10,563	38	0	274	274	6,718	3,845			
	Jun	12,262	15,131	7,565	10	0	286	286	7,026	539			
	Jul	0	0	0	60	0	207	207	5,073	-5,073			
	Aug	0	0	0	45	0	0	0	0	0			
	Yala total	89,253	110,139	55,069	385	121	1,266	1,145	28,094	26,975	2,131	4,585	187%
	Total	216,218	266,813	133,406	1,027	558	2,361	1,803	44,253				
1994/95	Sep	0	0	0	214	126	182	55	1,354	-1,354			
	Oct	22,405	27,648	13,824	250	150	332	182	4,468	9,356			
	Nov	51,510	63,563	31,782	137	75	202	127	3,119	28,663			
	Dec	28,753	35,482	17,741	29	0	224	224	5,499	12,242			
	Jan	19,532	24,103	12,051	132	71	166	95	2,323	9,728			
	Feb	38,023	46,920	23,460	56	0	59	59	1,443	22,017			
	Maha total	160,223	197,715	98,858	817	423	1,165	742	18,207	80,651	6,924	9,378	382%
	Mar	28,279	34,897	17,448	11	0	182	182	4,457	17,992			
	Apr	65,946	81,378	40,689	185	107	317	210	5,161	35,528			
	May	66,095	81,561	40,781	133	72	274	202	4,953	35,827			
	Jun	17,365	21,429	10,714	53	0	286	286	7,026	3,638			
	Jul	21,777	26,872	13,436	29	0	207	207	5,073	8,363			
	Aug	18,144	22,390	11,195	42	0	0	0	0	11,195			
	Yala total	217,607	268,527	134,263	453	179	1,266	1,087	26,670	107,593	8,500	10,954	446%
	Total	377,830	466,242	233,121	1,270	602	2,431	1,829	44,877				

App. 2.3-3. Existing Water Balance Study in Liyangastota Walawe I.B Scheme

(1/2)

(1985/86-1994/95)

* Station of Rainfall Data

- 1) 1985 Sep-1988 Sep: Embilipitiya
- 2) 1988 Oct-1995 Aug: Mamadola

Command Area = 2,553 ha

	Ridiyagama Tank Issue Records			*Rainfall		Unit FWR	Unit FIR	FIR	Water Balance		Cultivated Area Possible Area	
	(c)	(d)	(e)	(f)		(g)	(h)	(i)	Volume	Area	(l)	(m)
	(Ac.ft)	(100m ³)	(dx50%)	(mm)	(mm)	(mm)	(g-f) (mm)	(h x A) (100m ³)	(j) (e-i) (100m ³)	(k) (j/g) (ha)	(k+2,553) (ha)	(l+2,553) (%)
1985/86	Sep	N.A.		135	73							
	Oct	N.A.		265	160							
	Nov	N.A.		224	133							
	Dec	N.A.		179	103							
	Jan	N.A.		143	79							
	Feb	N.A.		97	48							
	Maha total	0	0	1,043	597						N.A.	N.A.
	Mar	0	0	49	0	0	0	0	0	0		
	Apr	11,770	14,524	7,262	138	75	182	107	2,719	4,542		
	May	12,181	15,031	7,516	49	0	343	343	8,770	-1,255		
	Jun	11,959	14,758	7,379	19	0	267	267	6,828	551		
	Jul	12,166	15,013	7,507	7	0	291	291	7,427	80		
	Aug	10,956	13,520	6,760	55	0	239	239	6,110	650		
	Yala total	59,032	72,846	36,423	316	75	1,323	1,248	31,854	4,569	345	2,899 114%
	Total	59,032	72,846	36,423	1,359	672	1,323	1,248	31,854			
1986/87	Sep	0	0	99	49	0	0	0	0	0		
	Oct	9,673	11,936	5,968	165	94	182	88	2,249	3,719		
	Nov	10,991	13,563	6,781	57	0	302	302	7,719	-938		
	Dec	11,430	14,105	7,052	44	0	209	209	5,344	1,709		
	Jan	12,175	15,024	7,512	67	28	234	206	5,262	2,250		
	Feb	9,689	11,956	5,978	1	0	169	169	4,323	1,655		
	Maha total	53,958	66,584	33,292	433	171	1,096	975	24,897	8,394	766	3,319 130%
	Mar	0	0	187	109	0	0	0	0	0		
	Apr	7,691	9,491	4,745	238	143	182	39	997	3,749		
	May	11,733	14,479	7,239	29	0	343	343	8,770	-1,531		
	Jun	11,256	13,890	6,945	11	0	267	267	6,828	117		
	Jul	12,041	14,858	7,429	0	0	291	291	7,427	3		
	Aug	3,853	4,755	2,378	112	58	239	182	4,637	-2,259		
	Yala total	46,575	57,473	28,737	577	309	1,323	1,122	28,659	78	6	2,559 100%
	Total	100,532	124,057	62,028	1,010	479	2,419	2,097	53,556			
1987/88	Sep	0	0	101	51	0	0	0	0	0		
	Oct	7,535	9,298	4,649	265	161	53	0	0	4,649		
	Nov	8,061	9,948	4,974	200	117	294	177	4,525	449		
	Dec	12,164	15,011	7,505	55	0	248	248	6,343	1,163		
	Jan	12,397	15,298	7,649	58	0	207	207	5,298	2,351		
	Feb	4,922	6,074	3,037	78	35	244	208	5,320	-2,283		
	Maha total	45,081	55,629	27,815	757	364	1,047	841	21,485	6,330	604	3,158 124%
	Mar	5,194	6,410	3,205	150	83	122	38	980	2,225		
	Apr	9,975	12,309	6,155	178	102	299	197	5,028	1,127		
	May	12,010	14,821	7,410	83	38	307	269	6,870	540		
	Jun	11,359	14,054	7,027	64	26	254	229	5,837	1,190		
	Jul	11,676	14,408	7,204	50	0	298	298	7,598	-394		
	Aug	1,284	1,585	793	38	0	83	83	2,122	-1,330		
	Yala total	51,529	63,587	31,793	561	249	1,363	1,114	28,435	3,358	246	2,800 110%
	Total	96,610	119,216	59,608	1,318	613	2,410	1,955	49,920			
1988/89	Sep	5,880	7,256	3,628	80	37	53	17	430	3,199		
	Oct	11,456	14,137	7,069	134	73	304	231	5,890	1,179		
	Nov	7,031	8,676	4,338	205	120	242	121	3,096	1,242		
	Dec	12,384	15,282	7,641	121	64	199	135	3,449	4,192		
	Jan	9,724	11,999	6,000	93	45	239	194	4,954	1,046		
	Feb	0	0	0	17	0	59	59	1,502	-1,502		
	Maha total	46,475	57,351	28,675	650	339	1,095	757	19,320	9,356	854	3,407 133%
	Mar	9,810	12,106	6,053	67	28	182	154	3,920	2,132		
	Apr	8,427	10,400	5,200	105	53	317	264	6,746	-1,546		
	May	10,382	12,812	6,406	20	0	274	274	6,990	-584		
	Jun	11,133	13,739	6,869	44	0	286	286	7,311	-442		
	Jul	6,316	7,793	3,897	85	40	207	167	4,259	-362		
	Aug	0	0	0	42	0	0	0	0	0		
	Yala total	46,069	56,849	28,424	362	121	1,266	1,145	29,225	-801	-63	2,490 98%
	Total	92,544	114,200	57,100	1,012	460	2,361	1,901	48,545			
1989/90	Sep	7,035	8,682	4,341	65	26	53	27	693	3,648		
	Oct	10,266	12,668	6,334	42	0	304	304	7,753	-1,419		
	Nov	9,077	11,201	5,600	92	45	242	197	5,027	573		
	Dec	10,721	13,230	6,615	11	0	199	199	5,080	1,535		
	Jan	8,863	10,937	5,469	52	0	239	239	6,105	-636		
	Feb	0	0	0	0	0	59	59	1,502	-1,502		
	Maha total	45,963	56,718	28,359	261	71	1,095	1,024	26,159	2,200	201	2,754 108%
	Mar	13,959	17,226	8,613	75	33	182	149	3,794	4,819		
	Apr	10,364	12,789	6,394	56	0	317	317	8,106	-1,711		
	May	11,193	13,812	6,906	124	66	274	208	5,303	1,603		
	Jun	12,685	15,653	7,827	48	0	286	286	7,311	516		
	Jul	4,605	5,683	2,841	12	0	207	207	5,278	-2,437		
	Aug	0	0	0	0	0	0	0	0	0		
	Yala total	52,806	65,162	32,581	315	99	1,266	1,167	29,792	2,789	220	2,774 109%
	Total	98,768	121,880	60,940	576	170	2,361	2,191	55,951			

App. 2.3-3. Existing Water Balance Study In Llyangastofa Walawe I.B Scheme (1985/86~1994/95) (2/2)

* Station of Rainfall Data
 1) 1985 Sep-1988 Sep: Embilipitiya
 2) 1988 Oct-1995 Aug: Mamadola

Command Area = 2,553 ha

	Ridiyagama Tank Issue Records			*Rainfall		Unit FWR	Unit FIR	FIR	Water Balance		Cultivated Area Possible Area	
	(c) (Ac.ft)	(d) (1000m3)	(e) (div50%)	ER		(g) (mm)	(h) (g-f) (mm)	(i) (h x A) (1000m3)	Volume	Area	(l) (k+2,553) (ha)	(m) (l/2,553) (%)
				(j) (1000m3)	(k) (j/g) (ha)							
1990/91	Sep	11,254	13,887	6,944	17	0	182	182	4,637	2,306		
	Oct	4,165	5,140	2,570	238	142	332	190	4,856	-2,286		
	Nov	5,016	6,189	3,095	256	155	202	47	1,204	1,890		
	Dec	8,146	10,052	5,026	155	87	224	137	3,501	1,525		
	Jan	4,514	5,570	2,785	203	119	166	47	1,196	1,589		
	Feb	417	515	257	3	0	59	59	1,502	-1,244		
	Maha total	33,512	41,353	20,677	873	503	1,165	662	16,896	3,780	325	2,878 113%
	Mar	13,386	16,518	8,259	47	0	182	182	4,637	3,622		
	Apr	9,101	11,231	5,616	129	69	317	248	6,333	-718		
	May	12,345	15,234	7,617	104	53	274	221	5,647	1,970		
	Jun	9,659	11,920	5,960	250	150	286	136	3,469	2,491		
	Jul	5,686	7,017	3,508	91	44	207	163	4,151	-642		
	Aug	0	0	0	39	0	0	0	0	0		
	Yala total	50,178	61,920	30,960	660	317	1,266	949	24,237	6,723	531	3,085 121%
	Total	83,689	103,273	51,636	1,533	820	2,431	1,611	41,133			
1991/92	Sep	11,634	14,356	7,178	29	0	182	182	4,637	2,541		
	Oct	7,095	8,756	4,378	265	161	332	172	4,382	-4		
	Nov	10,891	13,440	6,720	195	114	202	88	2,253	4,467		
	Dec	12,963	15,996	7,998	150	84	224	140	3,587	4,411		
	Jan	8,106	10,003	5,002	25	0	166	166	4,241	760		
	Feb	0	0	0	0	0	59	59	1,502	-1,502		
	Maha total	50,690	62,551	31,276	665	358	1,165	807	20,602	10,674	916	3,470 136%
	Mar	10,678	13,176	6,588	0	0	182	182	4,637	1,951		
	Apr	5,842	7,209	3,605	16	0	317	317	8,106	-4,501		
	May	4,960	6,121	3,060	145	80	274	194	4,952	-1,892		
	Jun	4,674	5,768	2,884	20	0	286	286	7,311	-4,427		
	Jul	2,232	2,754	1,377	65	26	207	180	4,604	-3,227		
	Aug	429	529	264	38	0	0	0	0	254		
	Yala total	28,815	35,557	17,779	282	106	1,266	1,160	29,610	-11,832	-935	1,619 63%
	Total	79,504	98,108	49,054	947	464	2,431	1,966	50,212			
1992/93	Sep	480	592	296	113	59	0	0	0	296		
	Oct	6,409	7,909	3,954	88	42	182	140	3,571	383		
	Nov	6,448	7,956	3,978	271	165	302	138	3,513	466		
	Dec	7,850	9,687	4,843	95	46	209	163	4,158	686		
	Jan	11,635	14,358	7,179	22	0	234	234	5,967	1,212		
	Feb	10,353	12,775	6,388	18	0	169	169	4,323	2,064		
	Maha total	43,174	53,276	26,638	606	312	1,096	843	21,532	5,106	466	3,019 118%
	Mar	0	0	0	28	0	0	0	0	0		
	Apr	13,548	16,719	8,359	106	54	182	127	3,253	5,106		
	May	7,973	9,838	4,919	169	96	343	247	6,307	-1,388		
	Jun	9,792	12,083	6,042	117	62	267	206	5,256	786		
	Jul	12,182	15,033	7,516	45	0	291	291	7,427	90		
	Aug	5,535	6,830	3,415	0	0	239	239	6,110	-2,695		
	Yala total	49,030	60,503	30,251	466	212	1,323	1,110	28,552	1,899	144	2,697 106%
	Total	92,204	113,779	56,890	1,072	524	2,419	1,954	49,885			
1993/94	Sep	5,561	6,862	3,431	12	0	53	53	1,362	2,069		
	Oct	9,475	11,693	5,846	154	86	304	217	5,548	299		
	Nov	6,104	7,533	3,766	337	209	242	33	834	2,932		
	Dec	6,414	7,914	3,957	237	142	199	57	1,463	2,494		
	Jan	6,395	7,892	3,946	56	0	239	239	6,105	2,159		
	Feb	0	0	0	12	0	59	59	1,502	-1,502		
	Maha total	33,949	41,894	20,947	642	437	1,095	658	16,813	4,134	377	2,931 115%
	Mar	12,285	15,159	7,580	130	70	182	112	2,853	4,727		
	Apr	9,314	11,493	5,747	102	51	317	266	6,800	-1,054		
	May	11,598	14,312	7,156	38	0	274	274	6,990	166		
	Jun	12,079	14,906	7,453	10	0	286	286	7,311	142		
	Jul	9,043	11,160	5,580	60	0	207	207	5,278	302		
	Aug	527	650	325	45	0	0	0	0	325		
	Yala total	54,846	67,680	33,840	385	121	1,266	1,145	29,232	4,608	364	2,917 114%
	Total	88,795	109,574	54,787	1,027	558	2,361	1,803	46,046			
1994/95	Sep	8,174	10,087	5,044	214	126	182	55	1,409	3,635		
	Oct	8,440	10,415	5,207	250	150	332	182	4,649	559		
	Nov	6,606	8,152	4,076	137	75	202	127	3,245	831		
	Dec	11,265	13,901	6,950	29	0	224	224	5,722	1,229		
	Jan	8,140	10,044	5,022	132	71	166	95	2,417	2,605		
	Feb	0	0	0	56	0	59	59	1,502	-1,502		
	Maha total	42,625	52,599	26,299	817	423	1,165	742	18,944	7,355	632	3,185 125%
	Mar	12,797	15,791	7,896	11	0	182	182	4,637	3,258		
	Apr	9,918	12,239	6,120	185	107	317	210	5,370	749		
	May	9,414	11,617	5,809	133	72	274	202	5,154	655		
	Jun	11,605	14,321	7,160	53	0	286	286	7,311	-151		
	Jul	10,986	13,557	6,779	29	0	207	207	5,278	1,500		
	Aug	649	801	401	42	0	0	0	0	401		
	Yala total	55,370	68,327	34,164	453	179	1,266	1,087	27,751	6,413	507	3,060 120%
	Total	97,995	120,926	60,463	1,270	602	2,431	1,829	46,695			